



DeKalb County School District

DESIGN & CONSTRUCTION

1780 Montreal Road
Tucker, GA 30084-6705
(678) 676-1345

Dr. Devon Q. Horton
SUPERINTENDENT

SP5FACCON .35735.GENCONTR . Routing/Transmittal Form

Project: Briar Vista ES Major Systems Replacement Project No: 357-35
 Contractor: Centennial Contractors Architect: Corgan
 Originator: Atiba Nunnally Date: April 18, 2024

DOCUMENT ATTACHED

Design/Construction Phase

- Contract Award Package: (Reason Below)
 - Notice of Award
 - Notice to Proceed
 - Original Contract
- Mandatory Addendum to Owner Architect Agreement - State Capital Outlay
- Work Authorization
- Request for Proposal/Invitation to Bid Package
 - Review
 - Signature
- Design Contract Additional Services Request
- Change Order
- Change Order Request: (Reason Below) COR Amount \$178,235.81
- Amendment Amendment Amount _____
 - Owner Request
 - Errors/Omissions
 - Unforeseen Conditions
 - Regulatory Change
 - Other (Specify): _____
- Review of Drawings or Specifications
- Finish Board/Color Boards
- Plaque Dedication Authorization
- Project Close-Out: (Reason Below)
 - Release of Retainage
 - Recommendation of Acceptance
 - Report of Substantial Completion
 - Certificate of Substantial Completion
- Other: _____

This Change Order includes payment of the cooling tower outlet relocation (PCO-004), cooling tower pipe replacement from 4" to 5" or 6", to ensure a pipe size that is more readily available for modifications (PCO-006) and fire alarm system replacement (PCO-007) at Briar Vista ES.

Notes:

REVIEWERS & APPROVALS

Please Fill In Appropriately and Forward to the Next Approver

Review	Approve	Name	Date
<input type="radio"/>	<input checked="" type="radio"/>	Atiba Nunnally	4/18/2024
<input type="radio"/>	<input type="radio"/>	Mel Butler	4/30/24
<input type="radio"/>	<input type="radio"/>	Richard Boyd	5/7/24
<input type="radio"/>	<input type="radio"/>	Erick Hofstetter	5.10.24
<input type="radio"/>	<input type="radio"/>	Accounting Mgr	5/17/24
<input type="radio"/>	<input type="radio"/>		
<input type="radio"/>	<input type="radio"/>		

THE DEKALB COUNTY BOARD OF EDUCATION
 CONTRACTS AND CONTRACT MANAGEMENT
 Contract/Change Order Reference No.

Project Name: Briar Vista Elementary Major Building Systems Replacement
Project No.: 357-423
Change Order No.: 001
Date: 4/18/2024

Contractor: Centennial Contractors Enterprises, Inc.
 3200 Cobb Galleria Pkwy, Suite 210 Phone: (770) 613-2999
 Atlanta, GA 30339
 (hereinafter "the Contractor")

Project Description:
 Replacement of roof, Replacement of HVAC components (classroom units in the front addition, mechanical room equipment.) New security vestibule. Accessibility improvements at the northeast corridor to install a wheelchair ramp and lift.

Reason for Change:
 PCO #004 – To reconfigure the cooling tower connection from a bottom connection, to a side connection.
 PCO #006 – To change the HVAC pipe size to a more readily available size.
 PCO #007 – To replace the fire alarm system.

The Contract for the above-referenced Project is hereby amended to provide for the following described change(s) upon the terms set forth below:
Scope of Work (for this change):
 PCO #004 – Cooling Tower Outlet = \$4,427.71
 PCO #006 – HVAC Pipe Size Change = \$42,737.32
 PCO #007 – Fire Alarm System Replacement = \$131,070.78
 Total Cost = \$178,235.81

Contract Amount:	Original Contract Price:	\$ 3,987,100.00
	Previous Change Orders:	\$ 0.00
	Current Contract Price (with Change(s)):	\$ 3,987,100.00
	Amount of this Change Order:	<u>\$ 178,235.81</u>
	Revised Contract Price:	\$ 4,165,335.81

Contract Time:	Original Substantial Completion Date:	10/5/2024
	Increase/(Decrease) in calendar days by previous Change Order(s):	0
	Increase/(Decrease) in calendar days by this Change Order:	0
	Revised Substantial Completion Date:	10/5/2024

Attachments (Incorporated by Reference):

CLAIM IDENTIFICATION OR WAIVER
 The Contractor has no claims arising out of or related to the Project for any (i) costs, expenses, profit, overhead, direct damages, consequential damages or increase in the Contract Price or (ii) delay or impact to the Contractor or the Project except as identified as follows:

and any and all claims that are not identified hereinabove by the Contractor are hereby waived by the Contractor.

Signatures are included on the following page.

As changed hereinabove, the Contract for the above-referenced Project shall continue in full force and effect.

Agreed to by the Contractor:



Tyler Shelton
Operations Manager *Christina Wilson*

04/19/2024

Date

Recommended for Acceptance by Architect:



Carissa Oyedele
Vice President

April 22, 2024

Date

Recommended for Acceptance by Program Manager & Owner:



Mel Butler
Program Director

4/30/24

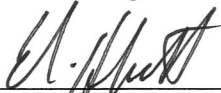
Date



Richard Boyd
Director of Design & Construction

5/2/24

Date



Erick Hofstetter
Chief Operating Officer

5.10.24

Date

Approved by The DeKalb County Board of Education:

Dr. Devon Q. Horton
Superintendent

Date

Mr. Dijon DaCosta, Sr.
Board Chair

Date

Board of Education Approval: (Required Over \$100,000)	Date: N/A	Item No.: N/A
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Briar Vista ES
Change Order No. 01 - Breakdown

PCO #	Description	Owner Request	Unforeseen Conditions	Allowance	Errors/Omissions
#004	Cooling Tower Outlet		\$4,427.71		
#006	HVAC Piping Change	\$42,737.32			
#007	Fire Alarm System Replacement	\$131,070.78			
	TOTAL	\$173,808.10	\$4,427.71	\$0.00	\$0.00



POTENTIAL CHANGE ORDER (PCO) REQUEST

School Name:	Briar Vista Elementary School	Date:	February 22, 2024
Project Name:	Briar Vista Elementary School MBSR	Project Number:	357-35
Title:	Cooling Tower Outlet	PCO #:	004

Description of Work:

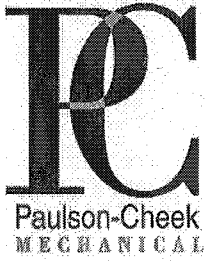
Per RF1 #07, based on the field conditions, the cooling tower connections will change from bottom discharge to using a standard side connections.

A. Subcontractor Cost of the Work		
Paulson Cheek	\$	4,200.00
	\$	-
	\$	-
	\$	-
	\$	-
	\$	-
		Subtotal A: \$ 4,200.00
B. CONTRACTOR Fee: (As per Section 11.7.1.2) - 5% subcontractor work		Subtotal B: \$ 210.00
C. CONTRACTOR Cost of the Work:		
Payroll Costs (See attached supporting documentation.)	\$	-
Materials and Equipment (See attached supporting documentation.)	\$	-
Consultant Costs (See attached supporting documentation.)	\$	-
Self-Performed Costs (See attached supporting documentation.)		
		Subtotal C: \$ -
D. P&P Bond - 0.4% of Total Subs Cost of Change		Subtotal D: \$ 17.71
E. CONTRACTOR Fee: - 10% self performed		Subtotal E: \$ -
Total = (A + B + C + D + E)		Total: \$ 4,427.71

The proposal would Increase Decrease the Milestones and/or Contract Time by _____ calendar days.
 The proposal does NOT affect the Milestones and/or Contract Time.

<i>Christian Wilson</i>		February 22, 2024
Contractor Signature	Title	Date

	Carissa Oyedele	April 11, 2024
	Vice President, Corgan	



Paulson-Cheek Mechanical
6145 Northbelt Parkway
Suite F
Norcross, GA 30071
Ga. Reg. 000386
770. 729. 0076
770. 729. 1076 Fax

2/22/24

Job Name: **DCSD Briar Vista - Tower Outlet**

The tower was coordinated and approved to be bottom outlet. When coordinating the new structural support, they came back not wanting to do so.

Paulson-Cheek Mechanical proposes to provide and install the material and equipment shown on the plans and specifications for the total price of \$ **4,200**

Tower Work by Evapco	\$ 3,780
OH&P 10%	\$ 378
Bond 1%	\$ 42

We specifically include the following:

- State Sales Tax and HVAC Permit Fees
- Submittals and Shop Drawings
- Operation and Maintenance Manuals
- Warranty
- Start-Up

We specifically exclude the following:

- Power Wiring, Disconnects, and any misc. 120 volt wiring
- Gas Piping by others
- Final Flashing of Roof Penetrations
- Architectural Louvers
- Smoke Detectors
- Interlock to Fire Alarm System
- Cutting, Coring, Patching, and Painting
- Equipment Pads, and Structural Supports
- Plumbing/Sprinkler Work
- Trash Removal from Site (On Site Container provided by Others)
- Davis Bacon Wages
- Bond (rate 1.0%)

Thank you for the opportunity to quote this project. Should you have any questions, please feel free to call.

Tommy Rape
Preconstruction Manager, cell 678-282-4036, trape@paulsoncheek.com



POTENTIAL CHANGE ORDER (PCO) REQUEST

School Name:	Briar Vista Elementary School	Date:	March 25, 2024
Project Name:	Briar Vista Elementary School MBSR	Project Number:	357-35
Title:	HVAC Pipe Size Change	PCO #:	006

Description of Work:

Per RFI #4 and RFI #9, we are to run either 5" or 6" pipe in lieu of the 4" supply and return pipe running from the cooling tower shown on Drawing M300. This proposal is for 6" pipe to ensure that the more readily available pipe size is available for any modifications that are required for the piping.

A. Subcontractor Cost of the Work		
Paulson-Cheek	\$	40,539.40
	\$	-
	\$	-
	\$	-
	\$	-
	\$	-
	\$	-
		Subtotal A: \$ 40,539.40
B. CONTRACTOR Fee: (As per Section 11.7.1.2) - 5% subcontractor work		Subtotal B: \$ 2,026.97
C. CONTRACTOR Cost of the Work:		
Payroll Costs (See attached supporting documentation.)	\$	-
Materials and Equipment (See attached supporting documentation.)	\$	-
Consultant Costs (See attached supporting documentation.)	\$	-
Self-Performed Costs (See attached supporting documentation.)		
		Subtotal C: \$ -
D. P&P Bond - 0.4% of Total Subs Cost of Change		Subtotal D: \$ 170.95
E. CONTRACTOR Fee: - 10% self performed		Subtotal E: \$ -
Total = (A + B + C + D + E)		Total: \$ 42,737.32

- The proposal would Increase Decrease the Milestones and/or Contract Time by _____ calendar days.
 The proposal does NOT affect the Milestones and/or Contract Time.

<i>Christian Wilson</i>		APM	Program General Manager
Contractor Signature	Title	Date	03/26/2024



SE Region
3351 Wrightsboro Road, Suite 403
Augusta, Georgia 30909
P: (706) 723-5527
F: (770) 613-2992

Project: 73150-0148 DCSD Briar Vista ES MBSR
1131 Briar Vista Terrace NE
Atlanta, Georgia 30324

RFI #4: DCSD Briar Vista ES - Heat Exchanger Bypass Size

Status	Open		
To	Sanika Kulkarni (Corgan Associates, Inc. (Atlanta Office)) Hiral Tank (Corgan Associates, Inc. (Atlanta Office))	From	Tyler Shelton (Centennial Contractors Enterprises, Inc.) 3200 Cobb Galleria Parkway, Suite 210 Atlanta, Georgia 30339
Date Initiated	Feb 1, 2024	Due Date	Feb 4, 2024
Location	Mechanical Room	Project Stage	Pre-Construction
Cost Impact	No	Schedule Impact	No
Spec Section		Cost Code	
Drawing Number	M401; Detail 4	Reference	
Linked Drawings			
Received From	Chris Conner (Paulson-Cheek)		
Copies To	Taylor Burchfield (Paulson-Cheek), Carissa Oyedele (Corgan Associates, Inc. (Atlanta Office)), Keith Philp (Paulson-Cheek), Matthew Wilson (Centennial Contractors Enterprises, Inc.)		

Activity

Question

Question from Tyler Shelton Centennial Contractors Enterprises, Inc. on Thursday, Feb 1, 2024 at 03:43 PM EST
Detail 4 on M401 shows a bypass line but no size is provided. Please provide sizing for this bypass line. See attached marked-up detail.

Attachments
[Briar Vista Bypass.png](#)

Awaiting an Official Response

Response:
The bypass size should be full size of the building loop. Per JSA response to RFI#9, the loop piping is being priced to be changed to either 5" or 6" instead of 4".
Thom Wille | PE, Principal
Johnson, Spellman & Associates, Inc.



SE Region
 3351 Wrightsboro Road, Suite 403
 Augusta, Georgia 30909
 P: (706) 723-5527
 F: (770) 613-2992

Project: 73150-0148 DCSD Briar Vista ES MBSR
 1131 Briar Vista Terrace NE
 Atlanta, Georgia 30324

RFI #9: DCSD Briar Vista ES - Cooling Tower/Heat Exchanger Pipe Sizing

Status	Open		
To	Sanika Kulkarni (Corgan Associates, Inc. (Atlanta Office)) Hiral Tank (Corgan Associates, Inc. (Atlanta Office))	From	Tyler Shelton (Centennial Contractors Enterprises, Inc.) 3200 Cobb Galleria Parkway, Suite 210 Atlanta, Georgia 30339
Date Initiated	Mar 8, 2024	Due Date	Mar 11, 2024
Location		Project Stage	Pre-Construction
Cost Impact		Schedule Impact	
Spec Section	23 21 13 - Hydronic Piping	Cost Code	
Drawing Number	M300	Reference	Submittal #23 20 00-1
Linked Drawings			
Received From	Taylor Burchfield (Paulson-Cheek)		
Copies To	Marco Gonzalez (Centennial Contractors Enterprises, Inc.), Casey Lemieux (Paulson-Cheek), Thom Wille (Johnson, Spellman & Associates, Inc.), Matthew Wilson (Centennial Contractors Enterprises, Inc.)		

Activity

Question

Question from Tyler Shelton Centennial Contractors Enterprises, Inc. on Friday, Mar 8, 2024 at 03:36 PM EST

Sheet M300 (appended) shows 4" supply & return pipe running from the cooling tower. Note 3 on JSA's response to Victaulic's layout drawing submittal specifies to use 6" piping for both runs (see below).

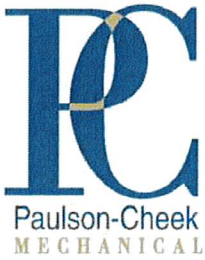
Please confirm that the entirety of both runs (supply and return) is to be 6" pipe. Furthermore, if these sections of pipe are to be switched from 4" to 6", please confirm that the CWS supply piping running from the discharge side of the pumps to the heat exchanger should remain at 4" (as shown on M300) and not be switched to 6" before transitioning to fit the HX inlet.

Attachments

[PCM-RFI-02 - CT HX Pipe Size Clarification.pdf](#)

Awaiting an Official Response

Response:
 Design intent was to match existing pipe size since the building loop is being reused. The 6" pipe size is shown as the connection size for the approved Evapco cooling tower and appears to be the same size as the existing tower. The pipe size of the new HX is shown with 4" connections. Provide pricing for Owner consideration to use 5" piping instead of 4" with confirmation of existing size. 6" piping can also be substituted if less costly since 5" is a non-standard size.
Thom Wille | PE, Principal
Johnson, Spellman & Associates, Inc.



Paulson-Cheek Mechanical

6145 Northbelt Parkway

Suite F

Norcross, GA 30071

Ga. Reg. 000386

770. 729. 0076

770. 729. 1076 Fax

March 6, 2024

Mr. Tyler Shelton & Mr. Matthew Wilson

Centennial Contractors Enterprises

Re: Briar Vista Elementary School

Subject: Request for Information – Cooling Tower / Heat Exchanger Pipe Sizing

Dear Mr. Shelton & Mr. Wilson,

Sheet M300 (appended) shows 4" supply & return pipe running from the cooling tower. Note 3 on JSA's response to Victaulic's layout drawings specifies to use 6" piping for both runs (see below).

3. Please note that proposed routing of piping to the bottom of the replacement cooling tower piping will need to be changed to side connection to match existing tower. See response to RFI#12. Provide 6" piping for cooling tower piping.

Please confirm that the entirety of both runs (supply and return) is to be 6" pipe.

Furthermore, if these sections of pipe are to be switched from 4" to 6", please confirm that the CWS supply piping running from the discharge side of the pumps to the heat exchanger should remain at 4" (as shown on M300) and not be switched to 6" before transitioning to fit the HX inlet.

Thank you for allowing us to work on this project with you. If you have any questions concerning this matter, please feel free to call.

Sincerely,

Taylor Burchfield
Project Engineer



Paulson-Cheek Mechanical

6145 Northbelt Parkway
Suite F
Norcross, GA 30071
Ga. Reg. 000386
770. 729. 0076
770. 729. 1076 Fax

3/21/24

Job Name: **DCSD Briar Vista - Mechanical Room Piping Size Change**

The contract documents call for all mechanical room piping to be 4” The existing building mains are 6”. Paulson Cheek was asked to match the existing piping.

Paulson-Cheek Mechanical proposes to provide and install the material and equipment shown on the plans and specifications for the total price of.....\$ **40,539.40**

Materials	\$ 19,239.40
Labor	\$ 17,250.00
OH&P 10%	\$ 3,649
Bond 1%	\$ 401

We specifically include the following:

- State Sales Tax and HVAC Permit Fees
- Submittals and Shop Drawings
- Operation and Maintenance Manuals
- Warranty
- Start-Up

We specifically exclude the following:

- Power Wiring, Disconnects, and any misc. 120 volt wiring
- Gas Piping by others
- Final Flashing of Roof Penetrations
- Architectural Louvers
- Smoke Detectors
- Interlock to Fire Alarm System
- Cutting, Coring, Patching, and Painting
- Equipment Pads, and Structural Supports
- Plumbing/Sprinkler Work
- Trash Removal from Site (On Site Container provided by Others)
- Davis Bacon Wages
- Bond (rate 1.0%)

Thank you for the opportunity to quote this project. Should you have any questions, please feel free to call.

Tommy Rape
Preconstruction Manager, cell 678-282-4036, trape@paulsoncheek.com



POTENTIAL CHANGE ORDER (PCO) REQUEST

School Name:	Briar Vista Elementary School	Date:	April 11, 2024
Project Name:	Briar Vista Elementary School MBSR	Project Number:	357-35
Title:	Fire Alarm System	PCO #:	007

Description of Work:

Per Bulletin #1, Drawing E100, E401, and Spec Section 28 31 00 provided, we propose to replace the entire fire alarm system for the school.

Fire alarm system replacement is included in the SPLOST VI projects. It is advantageous to add this scope at this time since the building is currently under construction. AN

A. Subcontractor Cost of the Work

Johnson Controls	\$	124,330.00	
	\$	-	
	\$	-	
	\$	-	
	\$	-	
	\$	-	Subtotal A: \$ 124,330.00

B. CONTRACTOR Fee: (As per Section 11.7.1.2) - **5% subcontractor work** **Subtotal B:** \$ 6,216.50

C. CONTRACTOR Cost of the Work:

Payroll Costs (See attached supporting documentation.)	\$	-	
Materials and Equipment (See attached supporting documentation.)	\$	-	
Consultant Costs (See attached supporting documentation.)	\$	-	
Self-Performed Costs (See attached supporting documentation.)	\$	-	Subtotal C: \$ -

D. P&P Bond - 0.4% of Total Subs Cost of Change **Subtotal D:** \$ 524.28

E. CONTRACTOR Fee: - 10% self performed **Subtotal E:** \$ -

Total = (A + B + C + D + E) **Total:** \$ 131,070.78

The proposal would Increase Decrease the Milestones and/or Contract Time by _____ calendar days.

The proposal does NOT affect the Milestones and/or Contract Time.

Christian Wilson

Contractor Signature

APM Program General Manager
Title

April 11, 2024
Date



Johnson Controls Fire Protection LP
1350 Northmeadow Pkwy Ste 100
Roswell, GA 30076

Johnson Controls Fire Protection LP Quotation

To:
Centennial Contractors Enterprises, Inc.

Project: Briar Vista Elementary School- FA Change Order -
CPQ-499778
Johnson Controls Reference: 650499778
Proposal #: 1
Date: 01/10/2024
Page: 1 of 11

Johnson Controls is pleased to offer for your consideration this quotation for the above project

Total net selling price \$124,330.00

Scope of Work

Briar Vista Elementary School Fire Alarm System Replacement

Thank you for allowing Johnson Controls Fire Protection (JCFP) to provide this quotation for the Briar Vista ES Fire Alarm project. This quote includes the equipment as listed and installation of the devices and cable. Also included is technical labor consisting of system programming, commissioning, acceptance testing, project closeout documentation. **120V power to panel, conduit, and back boxes to be provided by others.**

Please call Jesse Fritz at 843-872-4827 if you have questions.

Proposed scope of work:

- The existing fire alarm devices in the school will be demoed.
- The FACP will be replaced with a 4100ES system with voice.
- The new fire alarm devices and cabling will be installed.
- The fire alarm panel program will be modified with the new device addresses, description labels, and sequence of operation.
- The new devices will be functionally tested and testing will be performed pursuant to NFPA 72 guidelines.
- Witness testing will be performed with the Authority Having Jurisdiction (AHJ).
- Close out documentation will be provided to include submittal data sheets on the new devices, warranty on the added devices, and NFPA 72 Record of Completion.

Fire, Security, Communications, Sales & Service
Offices & Representatives in Principal Cities throughout North America



Johnson Controls Fire Protection LP
1350 Northmeadow Pkwy Ste 100
Roswell, GA 30076

Johnson Controls Fire Protection's Scope of Work includes:

THIS PROPOSAL IS BASED UPON THOSE ITEMS DENOTED BY "[X]":

- [X] BRIAR VISTA ES- BULLETIN01- CONFORMED SET (Dated 11/22/2023).
- [X] Briar Vista Fire Alarm Specs (11/22/2023)

THIS QUOTATION INCLUDES ONLY THOSE ITEMS DENOTED BY "[X]":

- [X] Equipment as listed and wire installed within the customer installed complete raceway

system with pull-strings.

- [X] Georgia State Sales Tax
- [X] Shop Drawings/As-Builts
- [X] Demolition: We will "make safe" the demo areas.
- [X] Technical installation support including programming.
- [X] 1 - functional test of the new and re-installed devices, and re-acceptance testing per NFPA 72 guidelines.
- [X] 1 - witness test of new devices installed.
- [X] NFPA certification documentation to include NFPA 72 Record of Completion.
- [X] One-year standard warranty.

Important Notes Specific to this Project:

- Conduit pathways for the new fire alarm devices to include back boxes will be provided by others.
- 120V to FACP will be provided by others.
- Plenum rated fire alarm cable will be provided. Two hour rated circuit integrity (CI) type cable is not included in this quotation.
- This proposal is based upon the project drawings listed above. JCI does not own the design and should any additional devices be required per code/AHJ they would need to be added with a change order.
- This quotation does not include a fire watch.
- This proposal does not include a phased checkout. If this project is to be phased a change order would be required for the additional inspections/labor.
- This quotation does not include weatherproof enclosures for the duct detectors. These would need to be added with a change order if required.
- This proposal does not include the duct detectors, as they were included on the original proposal. This is to be a change order and added on to the cost of the original proposal.
- Patching, painting and fire stopping will be by others.

Fire, Security, Communications, Sales & Service
Offices & Representatives in Principal Cities throughout North America



Johnson Controls Fire Protection LP
1350 Northmeadow Pkwy Ste 100
Roswell, GA 30076

INVOICING:

- €€€€ Monthly billing of all project activity will be submitted beginning with contract acceptance. This includes professional services such as design, technical labor, and mobilization.
- €€€€ All equipment will be ordered and billed as stored material within 60 days of issuance of the customer's PO or contract.
- €€€€ Payment terms are net 30 days.

Any additional work, beyond the scope of work listed above, will require a separate quotation and written authorization (signed change order) prior to initiation. Please note that several items on this bill of material have extended lead times. JCFP cannot be held responsible for supply chain issues or delays beyond our control. This quotation is valid for a period of 15 days unless modified in writing by Johnson Controls Fire Protection. All work is to be performed during normal Johnson Controls Fire Protection hours of 7:30am to 4:30pm Monday through Friday exclusive of company sponsored holidays unless specifically noted otherwise.

Fire, Security, Communications, Sales & Service
Offices & Representatives in Principal Cities throughout North America



4100ES

QTY	MODEL NUMBER	DESCRIPTION
1	4100-9701	ES-PS MSTR CTRLR 2X40
1	41002153	3Bay Glass Dr Pkg Factory Only
1	41007905	FACTORY BUILT-MAIN CONFIGURED
1	4100-2300	EXPANSION BAY (PHASE 10 ONLY)
1	4100-2504	CS GATEWAY W/IP COM 4100 SIDE
1	4100-3117	MSTR CTRLR IDNET2, FACTORY ONLY
1	4100-0644	120V ES-PS PDM HARNESS
1	4100-0634	POWER DISTRIBUTION MODULE 120V
1	4100-1412	ES NET BASIC AUDIO W/MIC
1	4100-1255	AUDIO IF 3-8 CHANNEL
2	4100-1329	DIG. 100W AMP,6NAC,120VAC,70V
1	4100-1288	64/64 LED/SWITCH CONTROLLER
2	4100-0011	FACTORY USE ONLY-AUDIO SHIPKIT
13	4100-1279	2 BLANK DISPLAY MODULE
1	4100-2320	AUDIO EXPANSION BAY
1	4100-3207	4 PT 2A AUX RELAY CARD W-FB

System Accessories

QTY	MODEL NUMBER	DESCRIPTION
1	E120V-GT	120V HYBRID SRG PROTECT
1	2975-9443	3 BAY BB/GDOOR/DRESS PNL RED
2	2081-9296	BATTERY 50AH
1	4100-0650	BATTERY SHELF
1	4603-9101	LCD ANNUNCIATOR
4	DH24120FPC	DR HLDR,SEMI-FLUSH,CHRM

Initiating Devices

QTY	MODEL NUMBER	DESCRIPTION
16	4098-9714	PHOTO SENSOR
3	4098-9733	HEAT SENSOR



19	4098-9792	SENSOR BASE
11	4099-9006	STATION-LED, DA PUSH ADDR
11	STI-13010FR	UNIVERSAL STOPPER DOME COVER W
4	4090-9001	SUPERVISED IAM
2	YJ1263	BRACKET/COVER IAM 2-GANG RED
3	4090-9002	RELAY IAM
2	4090-9008	DUAL RELAY IAM, IDNET

Notification Devices

QTY	MODEL NUMBER	DESCRIPTION
89	49SV-APPLW	SPKR/VIS APPL ONLY WALL
89	49SVC-WWFIRE	SV COVER WALL WHITE FIRE
89	49MP-SVWWW	SV MOUNTING PLATE WALL WHITE
22	49VO-WWF	VO Wall White FIRE
4	49SV-APPLW-O	SPKR/VISIBLE APPL ONLY WALL WP
4	49WPBB-SVCR	SV BACKBOX,CEILING RED WP
4	49SVC-CWFIRE-O	SV COVER, CEILING WHT FIRE WP
1	49VO-WWS	VO, WALL WHITE LOGO ONLY

Installation Material

QTY	MODEL NUMBER	DESCRIPTION
	DPFA	Wire
	DPIM	INSTALLATION MATERIALS

Spare Parts

QTY	MODEL NUMBER	DESCRIPTION
2	4098-9714	PHOTO SENSOR
1	4098-9733	HEAT SENSOR
1	4098-9792	SENSOR BASE
9	49SV-APPLW	SPKR/VIS APPL ONLY WALL
1	49SV-APPLW-O	SPKR/VISIBLE APPL ONLY WALL WP
2	49VO-WWF	VO Wall White FIRE



Project: Briar Vista Elementary School- FA Change Order - CPQ-499778
Johnson Controls Reference: 650499778
Proposal #: 1
Date: 01/10/2024
Page: 6 of 11

To the extent applicable, Johnson Controls has included an estimate for all state and local sales tax for this quote. The actual sales tax due will be calculated and billed upon issuance of an invoice, unless a valid exemption and/or resale certificate is received by Johnson Controls.

Fire, Security, Communications, Sales & Service
Offices & Representatives in Principal Cities throughout North America



IMPORTANT NOTICE TO CUSTOMER

This Agreement is contingent on credit approval, which may be checked at JCI's discretion and requires final approval of a JCI authorized manager before any equipment/ services may be provided. Should credit and/or approval be declined, this Agreement will be terminated and JCI's only obligation to customer will be to notify Customer of such termination and refund any amounts paid in advance. In accepting this Proposal, Customer agrees to the terms and conditions contained herein and any attachments or riders attached hereto that contain additional terms and conditions. It is understood that these terms and conditions shall prevail over any variation in terms and conditions on any purchase order or other document that the Customer may issue. Any changes in the system requested by the Customer after the execution of this Agreement shall be paid for by Customer and such changes shall be authorized in writing. **ATTENTION IS DIRECTED TO THE LIMITATION OF LIABILITY, WARRANTY, INDEMNITY AND OTHER CONDITIONS ON THE PRECEDING PAGES. This proposal shall be void if not accepted in writing within 30 days from the date of the Proposal.**

For Customers located in Canada, this Fire Domain Sale and Installation Agreement has been drawn up and executed in English at the request of and with the full concurrence of Customer. Ce contrat a été rédigé en anglais à la demande et avec l'assentiment du client.

Unless otherwise agreed to by the parties, pricing is based upon the following billing and payment terms: Invoices will be delivered via Email () payment due date of PWP, deposit for a minimum of 30% of the sell price, and the invoices are to be paid via Electronic Funds Transfer. Johnson Controls Electronic Funds Transfer details will be forth coming upon contractual agreement.
This offer shall be void if not accepted in writing within thirty (30) days from the date first set forth above.

To ensure that JCI is compliant with your company's billing requirements, please provide the following information:

PO is required to facilitate billing: NO: This signed contract satisfies requirement
 YES: Please reference this PO Number: _____

<p>Offered By:</p> <p>Johnson Controls Fire Protection LP 1350 Northmeadow Pkwy Ste 100 Roswell , GA 30076 Telephone: _____ Representative: _____ Email: jesse.fritz@jci.com</p>	<p>Accepted By: (Customer)</p> <p>Company: _____ Address: _____ Signature: _____ Title: _____ Date: _____</p>
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TERMS AND CONDITIONS (Rev. 8/23)

1. Payment and Invoicing. All payments are PWP from the date of invoice. Invoices shall be paid by Customer via Electronic Funds Transfer delivery via Email. Invoicing disputes must be identified in writing within 21 days of the invoice date. Payments of any disputed amounts are due and payable upon resolution. All other amounts remain due within Due Upon Receipt from the date of the invoice. Company shall invoice Customer for progress payments to 100% percent based upon equipment delivered or stored, and services performed. In the event project duration exceeds one month, Company reserves the right to submit partial invoices for progress payments for work completed at the project site. Customer agrees to pay any progress invoices in accordance with the payment terms set forth herein. In exchange for close-out documents to be provided by Company, Customer agrees to pay Company the remaining project balance when on-site labor is completed and prior to any final inspections. Customer shall provide financial information requested by Company to verify Customer's ability to pay for goods or services. If Customer fails to provide financial information or if Company, in its sole discretion determines that reasonable grounds exist to question Customer's ability or willingness to make payments when due (e.g., not making payments when due, late payments, or a reduction in Customer's credit score), Company may defer shipments, change payment terms, require cash in advance and/or require other security, without liability and without waiving any other remedies. Company may have against Customer. Company shall provide Customer with advance written notice of changes to payment terms. Customer acknowledges and agrees that timely payments of the full amounts listed on invoices is an essential term of this Agreement and that Customer's failure to make payment when due is a material breach of this Agreement. Customer further acknowledges that if there is any amount outstanding on an invoice, it is material to Company and will give Company, without prejudice to any other right or remedy, the right to, without notice: (i) suspend, discontinue or terminate performing any services and/or withhold further deliveries of equipment and other materials, terminate or suspend any unpaid software licenses, and/or suspend Company's obligations under or terminate this Agreement; and (ii) charge Customer interest on the amounts unpaid at a rate equal to the lesser of one and one half (1.5) percent per month or the maximum rate permitted under applicable law, until payment is made in full. Company's election to continue providing future services does not, in any way diminish Company's right to terminate or suspend services or exercise any or all rights or remedies under this Agreement. Company shall not be liable for any damages, claims, expenses, or liabilities arising from or relating to suspension of services for non-payment. In the event that there are exigent circumstances requiring services at the premises following suspension, those services shall be governed by the terms of this Agreement unless a separate contract is executed. If Customer disputes any late payment notice or Company's efforts to collect payment, Customer shall immediately notify Company in writing and explain the basis of the dispute. Customer agrees to pay all of Company's reasonable collection costs, including legal fees and expenses.

2. Deposit. Unless prohibited by law, Customer agrees to pay a deposit for a minimum of 20% of the project sell price (pre-tax) prior to Company providing any labor or materials on the project. Company will generate an invoice for the deposit after Company's receipt of a written agreement or order from Customer. Company will not commence work until receipt of the deposit.

3. Pricing. The pricing set forth in this Agreement is based on the number of devices to be installed and services to be performed as set forth in the Scope of Work ("Equipment" and "Services"). If the actual number of devices installed or services to be performed is greater than that set forth in the Scope of Work, the price will be increased accordingly. If this Agreement extends beyond one year, Company may increase prices upon notice to the Customer. All stated prices are exclusive of and Customer agrees to pay any taxes, fees, duties, tariffs, false alarm assessments, installation or alarm permits, and levies or other similar charges imposed and/or enacted by a government, however designated or imposed, including but not limited to value-added and withholding taxes that are levied or based upon the amounts paid under this Agreement. This Agreement is entered into with the understanding that the services to be provided by Company are not subject to any local, state, or federal prevailing wage statute. If it is later determined that local, state, or federal

prevailing wage rates apply to the services to be provided by Company, Company reserves the right to issue a modification or change order to adjust the wage rates to the required prevailing wage rate. Customer agrees to pay for the applicable prevailing wage rates.

Prices in any quotation or proposal from Company are subject to change upon notice sent to Customer at any time before the quotation or proposal has been accepted. Prices for products covered by this Agreement may be adjusted by Company, upon notice to Customer at any time prior to shipment and regardless of Customer's acceptance of the Company's proposal or quotation, to reflect any increase in Company's cost of raw materials (e.g., steel, aluminum) inability to secure Products, changes or increases in law, labor, taxes, duties, tariffs or quotas, acts of government, any similar charges, or to cover any extra, unforeseen and unusual cost elements.

4. Alarm Monitoring Services. Any reference to alarm monitoring services in this Agreement is included for pricing purposes only. Alarm monitoring services are performed pursuant to the terms and conditions of Company's standard alarm monitoring services agreement.

5. Code Compliance. Company does not undertake an obligation to inspect for compliance with laws or regulations unless specifically stated in the Scope of Work. Customer acknowledges that the Authority Having Jurisdiction (e.g. Fire Marshal) may establish additional requirements for compliance with federal, state/provincial and local codes. Any additional services or equipment required will be provided at an additional cost to Customer.

6. Limitation of Liability; Limitations of Remedy. It is understood and agreed by the Customer that Company is not an insurer and that insurance coverage shall be obtained by the Customer and that amounts payable to company hereunder are based upon the value of the services and the scope of liability set forth in this Agreement and are unrelated to the value of the Customer's property and the property of others located on the premises. Customer agrees to look exclusively to the Customer's insurer to recover for injuries or damage in the event of any loss or injury and that Customer releases and waives all right of recovery against Company arising by way of subrogation. Company makes no warranty or merchantability or fitness for a particular purpose that equipment or services supplied by Company will detect or avert occurrences or the consequences therefrom that the equipment or service was designed to detect or avert. It is impractical and extremely difficult to fix the actual damages, if any, which may proximately result from failure on the part of Company to perform any of its obligations under this Agreement. Accordingly, Customer agrees that, Company shall be exempt from liability for any loss, damage or injury arising directly or indirectly from occurrences, or the consequences therefrom, which the equipment or service was designed to detect or avert. Should Company be found liable for any loss, damage or injury arising from a failure of the equipment or service in any respect, Company's liability shall be limited to an amount equal to the Agreement price (as increased by the price for any additional work) or where the time and material payment term is selected, Customer's time and material payments to Company to be calculated with reference to payments made at the time the loss is sustained. Where this Agreement covers multiple sites, liability shall be limited to the amount of the payments allocable to the site where the incident occurred. Such sum shall be complete and exclusive. In no event shall Company be liable for any damage, loss, injury, or any other claim arising from any servicing, alterations, modifications, changes, or movements of the Covered System(s) or any of its component parts by Customer or any third party. To the maximum extent permitted by law, in no event shall Company and its affiliates and their respective personnel, suppliers and vendors be liable to Customer or any third party under any cause of action or theory of liability, even if advised of the possibility of such damages, for any (a) special, incidental, consequential, punitive or indirect damages of any kind; (b) loss of profits, revenues, data, customer opportunities, business, anticipated savings or goodwill; (c) business interruption; or (d) data loss or other losses arising from viruses, ransomware, cyber-attacks or failures or interruptions to network systems. The limitations of liability set forth in this Agreement shall inure to the benefit of all parents,

subsidiaries and affiliates of Company, whether direct or indirect, Company's employees, agents, officers and directors.

7. Reciprocal Waiver of Claims (SAFETY Act). Certain of Company's systems and services have received Certification and/or Designation as Qualified Anti-Terrorism Technologies ("QATT") under the Support Anti-terrorism by Fostering Effective Technologies Act of 2002, 6 U.S.C. §§ 441-444 (the "SAFETY Act"). As required under 6 C.F.R. 25.5 (e), to the maximum extent permitted by law, Company and Customer hereby agree to waive their right to make any claims against the other for any losses, including business interruption losses, sustained by either party or their respective employees, resulting from an activity resulting from an "Act of Terrorism" as defined in 6 C.F.R. 25.2, when QATT have been deployed in defense against, response to, or recovery from such Act of Terrorism.

8. General Provisions. Customer has selected the service level desired after considering and balancing various levels of protection afforded, and their related costs. All work to be performed by Company will be performed during normal working hours of normal working days (8:00 a.m. – 5:00 p.m., Monday through Friday, excluding Company holidays), as defined by Company, unless additional times are specifically described in this Agreement. Company will perform the services described in the Scope of Work section ("Services") for one or more system(s) or equipment as described in the Scope of Work section or the listed attachments ("Covered System(s)"). The Customer shall promptly notify Company of any malfunction in the Covered System(s) which comes to Customer's attention. This Agreement assumes the Covered System(s) are in operational and maintainable condition as of the Agreement date. If, upon initial inspection, Company determines that repairs are recommended, repair charges will be submitted for approval prior to any work. Should such repair work be declined Company shall be relieved from any and all liability arising therefrom. UNLESS OTHERWISE SPECIFIED IN THIS AGREEMENT, ANY INSPECTION (AND, IF SPECIFIED, TESTING) PROVIDED UNDER THIS AGREEMENT DOES NOT INCLUDE ANY MAINTENANCE, REPAIRS, ALTERATIONS, REPLACEMENT OF PARTS, OR ANY FIELD ADJUSTMENTS WHATSOEVER, NOR DOES IT INCLUDE THE CORRECTION OF ANY DEFICIENCIES IDENTIFIED BY COMPANY TO CUSTOMER. COMPANY SHALL NOT BE RESPONSIBLE FOR EQUIPMENT FAILURE OCCURRING WHILE COMPANY IS IN THE PROCESS OF FOLLOWING ITS INSPECTION TECHNIQUES, WHERE THE FAILURE ALSO RESULTS FROM THE AGE OR OBSOLESCENCE OF THE ITEM OR DUE TO NORMAL WEAR AND TEAR. THIS AGREEMENT DOES NOT COVER SYSTEMS, EQUIPMENT, COMPONENTS OR PARTS THAT ARE BELOW GRADE, BEHIND WALLS OR OTHER OBSTRUCTIONS OR EXTERIOR TO THE BUILDING, ELECTRICAL WIRING, AND PIPING.

9. Customer Responsibilities. Customer shall furnish all necessary facilities for performance of its work by Company, adequate space for storage and handling of materials, light, water, heat, heat tracing, electrical service, local telephone, watchman, and crane and elevator service and necessary permits. Where wet pipe system is installed, Customer shall supply and maintain sufficient heat to prevent freezing of the system. Customer shall promptly notify Company of any malfunction in the Covered System(s) which comes to Customer's attention. This Agreement assumes any existing system(s) are in operational and maintainable condition as of the Agreement date. If, upon initial inspection, Company determines that repairs are recommended, repair charges will be submitted for approval prior to any work. Should such repair work be declined Company shall be relieved from any and all liability arising therefrom. Customer shall further:

- supply required schematics and drawings unless they are to be supplied by Company in accordance with this Agreement;
- Provide a safe work environment. In the event of an emergency or Covered System(s) failure, take reasonable safety precautions to protect against personal injury, death, and property damage, continue such measures until the Covered System(s) are operational, and notify Company as soon as possible under the circumstances.
- Provide Company access to any system(s) to be serviced,
- Comply with all laws, codes, and regulations pertaining to the equipment and/or services provided under this Agreement.

Customer is solely responsible for the establishment, operation, maintenance, access, security and other aspects of its computer network ("Network") and shall supply Company secure Network access for providing its services. Products networked, connected to the internet, or otherwise connected to computers or other devices must be appropriately protected by Customer and/or end user against unauthorized access. Customer is responsible to take appropriate measures, including performing back-ups, to protect information, including without limit data, software, or files (collectively "Data") prior to receiving the service or products.

10. Excavation. In the event the Work includes excavation, Customer shall pay, as an extra to the contract price, the cost of any additional work performed by Company dues to water, quicksand, rock or other unforeseen condition or obstruction encountered or shoring required.

11. Structure and Site Conditions. While employees of Company will exercise reasonable care in this respect, Company shall be under no responsibility for loss or damage due to the character, condition or use of foundations, walls, or other structures not erected by Company or resulting from the excavation in proximity thereto, or for damage resulting from concealed piping, wiring, fixtures, or other equipment or condition of water pressure. All shoring or protection of foundation, walls or other structures subject to being disturbed by any excavation required hereunder shall be the responsibility of Customer. Customer shall have all things in readiness for installation including, without limitation, structure to support the sprinkler system and related equipment (including tanks), other materials, floor or suitable working base, connections and facilities for erection at the time the materials are delivered. In the event Customer fails to have all things in readiness at the time scheduled for receipt of materials, Customer shall reimburse Company for all expenses caused by such failure. Failure to make areas available to Company during performance in accordance with schedules that are the basis for Company's proposal shall be considered a failure to have things in readiness in accordance with the terms of this Agreement.

12. Confined Space. If access to confined space by Company is required for the performance of Services, Services shall be scheduled and performed in accordance with Company's then-current hourly rate.

13. Hazardous Materials. Customer represents that, except to the extent that Company has been given written notice of the following hazards prior to the execution of this Agreement, to the best of Customer's knowledge there is no:

- Space in which work must be performed that, because of its construction, location, contents or work activity therein, accumulation of a hazardous gas, vapor, dust or fume or the creation of an oxygen-deficient atmosphere may occur,
- "permit confined space," as defined by OSHA for work performed by Company in the United States,
- risk of infectious disease,
- need for air monitoring, respiratory protection, or other medical risk,
- asbestos, asbestos-containing material, formaldehyde or other potentially toxic or otherwise hazardous material contained in or on the surface of the floors, walls, ceilings, insulation or other structural components of the area of any

building where work is required to be performed under this Agreement.

All of the above are hereinafter referred to as "Hazardous Conditions". Company shall have the right to rely on the representations listed above. If hazardous conditions are encountered by Company during the course of Company's work, the discovery of such materials shall constitute an event beyond Company's control and Company shall have no obligation to further perform in the area where the hazardous conditions exist until the area has been made safe by Customer as certified in writing by an independent testing agency, and Customer shall pay disruption expenses and re-mobilization expenses as determined by Company. This Agreement does not provide for the cost of testing involving a discharge or release, capture, containment, transport, removal, or disposal (collectively, the "Discharge Services") of any hazardous waste materials, hazardous materials, or firefighting materials including without limitation firefighting foam encountered in and/or discharged from any of the Covered System(s) and/or during performance of the Services. Said materials shall at all times remain the responsibility and property of Customer. Customer shall be responsible for any Discharge Services associated with such materials, including all discharged firefighting foam in accordance with all applicable law. Company shall not be responsible for the testing, removal or disposal of such hazardous materials. Customer shall indemnify and hold Company harmless from and against any and all claims, demands and/or damages arising in whole or in part from the use of or any Discharge Services associated with any hazardous waste, hazardous materials, or firefighting materials including without limitation firefighting foam encountered or discharged from any of the Covered System(s) and/or during performance of the Services.

14. Occupational Health and Safety/OSHA Compliance. Customer shall indemnify and hold Company harmless from and against any and all claims, demands and/or damages arising in whole or in part from the enforcement of applicable laws regarding occupational health and safety for work performed in Canada or the Occupational Safety Health Act for work performed by Company in the United States. (and any amendments or changes thereto) unless said claims, demands or damages are a direct result of causes within the exclusive control of Company.

15. Interferences. Customer shall be responsible to coordinate the work of other trades (including but not limited to ducting, piping, and electrical) and for and additional costs caused by Company arising out of interferences to Company's work caused by other trades.

16. Modifications and Substitutions. Company reserves the right to modify materials, including substituting materials of later design, providing that such modifications or substitutions will not materially affect the performance of the Covered System(s).

17. Changes, Alterations, Additions. Changes, alterations and additions to the Scope of Work, plans, specifications or construction schedule shall be invalid unless approved in writing by Company. Should changes be approved by Company, that increase or decrease the cost of the work to Company, the parties shall agree, in writing, to the change in price prior to performance of any work. However, if no agreement is reached prior to the time for performance of said work, and Company elects to perform said work so as to avoid delays, then Company's estimate as to the value of said work shall be deemed accepted by Customer. In addition, Customer shall pay for all extra work requested by Customer or made necessary because of incompleteness or inaccuracy of plans or other information submitted by Customer with respect to the location, type of occupancy, or other details of the work to be performed. In the event the layout of Customer's facilities has been altered, or is altered by Customer prior to the completion of the Work, Customer shall advise Company, and prices, delivery and completion dates shall be changed by Company as may be required.

18. Commodities Availability. Company shall not be responsible for failure to provide services, deliver products, or otherwise perform work required by this Agreement due to lack of available steel products or products made from plastics or other commodities. In the event Company is unable, after reasonable commercial efforts, to acquire and provide steel products, or products made from plastics or other commodities, if required to perform work required by this Agreement, Customer hereby agrees that Company may terminate the Agreement, or the relevant portion of the Agreement, at no additional cost and without penalty. Customer agrees to pay Company in full for all work performed up to the time of any such termination.

19. Project Claims. Any claim of failure to perform against Company arising hereunder shall be deemed waived unless received by Company, in writing specifically setting forth the basis for such claim, within ten (10) days after such claims arises.

20. Back charges. No charges shall be levied against Company unless seventy-two (72) hours prior written notice is given to Company to correct any alleged deficiencies which are alleged to necessitate such charges and unless such alleged deficiencies are solely and directly caused by Company.

21. System Equipment. The purchase of equipment or peripheral devices (including but not limited to smoke detectors, passive infrared detectors, card readers, sprinkler system components, extinguishers and hoses) from Company shall be subject to the terms and conditions of this Agreement. If, in Company's sole judgment, any peripheral device or other system equipment, which is attached to the Covered System(s), whether provided by Company or a third party, interferes with the proper operation of the Covered System(s), Customer shall remove or replace such device or equipment promptly upon notice from Company. Failure of Customer to remove or replace the device shall constitute a material breach of this Agreement. If Customer adds any third party device or equipment to the Covered System(s), Company shall not be responsible for any damage to or failure of the Covered System(s) caused in whole or in part by such device or equipment.

22. Reports. Where inspection and/or test services are selected, such inspection and/or test shall be completed on Company's then current Report form, which shall be given to Customer, and, where applicable, Company may submit a copy thereof to the local authority having jurisdiction. The Report and recommendations by Company are only advisory in nature and are intended to assist Customer in reducing the risk of loss to property by indicating obvious defects or impairments noted to the system and equipment inspected and/or tested. They are not intended to imply that no other defects or hazards exist or that all aspects of the Covered System(s), equipment, and components are under control at the time of inspection. Final responsibility for the condition and operation of the Covered System(s) and equipment and components lies with Customer.

23. Limited Warranty. Subject to the limitations below, Company warrants any equipment (as distinguished from the Software) installed pursuant to this Agreement to be free from defects in material and workmanship under normal use for a period of one (1) year from the date of first beneficial use or all or any part of the Covered System(s) or 18 months after Equipment shipment, whichever is earlier, provided however, that Company's sole liability, and Customer's sole remedy, under this limited warranty shall be limited to the repair or replacement of the Equipment or any part thereof, which Company determines is defective, at Company's sole option and subject to the availability of service personnel and parts, as determined by Company. Company warrants expendable items, including, but not limited to, video and print heads, television camera tubes, video monitor displays tubes, batteries and certain other products in accordance with the applicable manufacturer's warranty. Company does not warrant devices designed to fail in protecting the System, such as, but not limited to, fuses and circuit breakers. Company warrants that any Company software described in this Agreement, as well as software contained in or sold as part of any Equipment described in this Agreement, will reasonably conform to its published specifications in effect at the time of delivery and for ninety (90) days after delivery. However, Customer agrees and acknowledges that the software may have inherent defects because of its complexity, and Customer's sole obligation with respect to software, and Customer's sole remedy, shall be to make available published modifications, designed to correct inherent defects, which become available during the warranty period. If Repair Services are included in this Agreement, Company warrants that its workmanship and material for repairs made pursuant to this Agreement will be free from defects for a period of ninety (90) days from the date of furnishing.

EXCEPT AS EXPRESSLY SET FORTH HEREIN, COMPANY DISCLAIMS ALL WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE SERVICES PERFORMED OR THE PRODUCTS, SYSTEMS OR EQUIPMENT, IF ANY, SUPPORTED HEREUNDER.

Warranty service will be performed during Company's normal working hours. If Customer requests warranty service at other than normal working hours, service will be performed at Company's then current rates for

after ours services. All repairs or adjustments that are or may become necessary shall be performed by and authorized representative of Company. Any repairs, adjustments or interconnections performed by Customer or any third party shall void all warranties. Company makes no and specifically disclaims all representations or warranties that the services, products, software or third party product or software will be secure from cyber threats, hacking or other similar malicious activity, or will detect the presence of, or eliminate, treat, or mitigate the spread transmission, or outbreak of any pathogen, disease, virus or other contagion, including but not limited to COVID-19. Unless agreed to in writing by the parties, any technical support, assistance, or advice ("Technical Support") provided by Company, such as suggestions as to design use and suitability of the products for the customer's application, is provided in good faith, but Customer acknowledges and agrees that Company is not the designer, engineer, or installer of record. Any Technical Support is provided for informational purposes only and shall not be construed as a representation or warranty, express or implied, concerning the proper selection, use, and/or application of products. Customer assumes exclusive responsibility for determining if the equipment and products supplied by Company are suitable for its intended application and all risk and liability, whether based in contract, tort or otherwise, in connection with its application and use of the products.

24. Indemnity. Customer agrees to indemnify, hold harmless and defend Company against any and all losses, damages, costs, including expert fees and costs, and expenses including reasonable defense costs, arising from any and all third party claims for personal injury, death, property damage or economic loss, including specifically any damages resulting from the exposure of workers to Hazardous Conditions whether or not Customer pre-notifies Company of the existence of said hazardous conditions, arising in any way from any act or omission of Customer or Company relating in any way to this Agreement, including but not limited to the Services under this Agreement, whether such claims are based upon contract, warranty, tort (including but not limited to active or passive negligence), strict liability or otherwise. Company reserves the right to select counsel to represent it in any such action.

25. Insurance. Customer shall name Company, its officers, employees, agents, subcontractors, suppliers, and representatives as additional insureds on Customer's general liability and auto liability policies.

26. Termination. Any termination under the terms of this Agreement shall be made in writing. In the event Customer terminates this Agreement prior to completion for any reason not arising solely from Company's performance or failure to perform, Customer understands and agrees that Company will incur costs of administration and preparation that are difficult to estimate or determine. Accordingly, should Customer terminate this Agreement as described above, Customer agrees to pay all charges incurred for products and equipment installed and services performed, and in addition pay an amount equal to twenty (20%) percent of the price of products and equipment not yet delivered and Services not yet performed, return all products and equipment delivered and pay a restocking fee of twenty (20%) percent of the price of products or equipment returned. Company may terminate this Agreement immediately at its sole discretion upon the occurrence of any Event of Default as hereinafter defined. If Company's performance of its obligations becomes impracticable due to obsolescence or unavailability of systems, equipment, or products (including component parts and/or materials) or because the Company or its supplier(s) has discontinued the manufacture or the sale of the equipment and/or products or is no longer in the business of providing the Services, Company may terminate this Agreement, or the affected portions, at its sole discretion upon notice to Customer. Company may terminate this Agreement, or the affected portions, at its sole discretion upon notice to the Customer if Company's performance of its obligations are prohibited because of changes in applicable laws, regulations or codes.

27. Default. An Event of Default shall be (a) failure of Customer to pay any amount when due and payable, (b) abuse of the System or the Equipment, (c) dissolution, termination, discontinuance, insolvency or business failure of Customer. Upon the occurrence of an Event of Default, Company may pursue one or more of the following remedies: (i) discontinue furnishing Services and delivering Equipment, (ii) by written notice to Customer declare the balance of unpaid amounts due and to become due under this Agreement to be immediately due and payable; (iii) receive immediate possession of any Equipment for which Customer has not paid; (iv) proceed at law or equity to enforce performance by

Customer or recover damages for breach of this Agreement, and (v) recover all costs and expenses, including without limitation reasonable attorneys' fees, in connection with enforcing or attempting to enforce this Agreement.

28. Exclusions. Unless expressly included in the Scope of Work, this Agreement expressly excludes, without limitation, testing inspection and repair of duct detectors, beam detectors, and UV/IR equipment; provision of fire watches; clearing of ice blockage; draining of improperly pitched piping; replacement of batteries; recharging of chemical suppression systems; reloading of upgrading, and maintaining computer software; system upgrades and the replacement of obsolete systems, equipment, components or parts; making repairs or replacements necessitated by reason of negligence or misuse of components or equipment or changes to Customer's premises, vandalism, corrosion (including but not limited to micro-bacterially induced corrosion ("MIC")), power failure, current fluctuation, failure due to non-Company installation, lightning, electrical storm, or other severe weather, water, accident, fire, acts of God or any other cause external to the Covered System(s). Repair Services provided pursuant to this Agreement do not cover and specifically excludes system upgrades and the replacement of obsolete systems, equipment, components or parts. All such services may be provided by Company at Company's sole discretion at an additional charge. If Emergency Services are expressly included in the scope of work section, the Agreement price does not include travel expenses.

29. No Option to Solicit. Customer shall not, directly or indirectly, on its own behalf or on behalf of any other person, business, corporation or entity, solicit or employ any Company employee, or induce any Company employee to leave his or her employment, for a period of two years after termination of this Agreement.

30. Force Majeure; Delays. Company shall not be liable, nor in breach or default of its obligations under this Agreement, for delays, interruption, failure to render services, or any other failure by Company to perform an obligation under this Agreement, where such delay, interruption or failure is caused, in whole or in part, directly or indirectly, by a Force Majeure Event. A "Force Majeure Event" is a condition or event that is beyond the reasonable control of Company, whether foreseeable or unforeseeable, including, without limitation, acts of God, severe weather (including but not limited to hurricanes, tornadoes, severe snowstorms or severe rainstorms), wildfires, floods, earthquakes, seismic disturbances, or other natural disasters, acts or omissions of any governmental authority (including change of any applicable law or regulation), epidemics, pandemics, disease, viruses, quarantines, or other public health risks and/or responses thereto, condemnation, strikes, lock-outs, labor disputes, an increase of 5% or more in tariffs or other excise taxes for materials to be used on the project, fires, explosions or other casualties, thefts, vandalism, civil disturbances, insurrection, mob violence, riots, war or other armed conflict (or the serious threat of same), acts of terrorism, electrical power outages, interruptions or degradations in telecommunications, computer, network, or electronic communications systems, data breach, cyber-attacks, ransomware, unavailability or shortage of parts, materials, supplies, or transportation, or any other cause or casualty beyond the reasonable control of Company. If Company's performance of the work is delayed, impacted, or prevented by a Force Majeure Event or its continued effects, Company shall be excused from performance under the Agreement. Without limiting the generality of the foregoing, if Company is delayed in achieving one or more of the scheduled milestones set forth in the Agreement due to a Force Majeure Event, Company will be entitled to extend the relevant completion date by the amount of time that Company was delayed as a result of the Force Majeure Event, plus such additional time as may be reasonably necessary to overcome the effect of the delay. To the extent that the Force Majeure Event directly or indirectly increases Company's cost to perform the services, Customer is obligated to reimburse Company for such increased costs, including, without limitation, costs incurred by Company for additional labor, inventory storage, expedited shipping fees, trailer and equipment rental fees, subcontractor fees, compliance with vaccination requirements, or other costs and expenses incurred by Company in connection with the Force Majeure Event.

31. One-Year Claims Limitation; Forum; Choice of Law. Company shall have the sole and exclusive right to determine whether any dispute, controversy or claim arising out of or relating to the Agreement, or the breach thereof, shall be submitted to a court of law or arbitrated. For Customers located in the United

States, the laws of Delaware shall govern the validity, enforceability, and interpretation of this Agreement, without regard to conflicts of law principles thereof, and the exclusive venue for any such litigation or arbitration shall be in Milwaukee, Wisconsin. For customers located in Canada, this agreement shall be governed by and be construed in accordance with the laws of Ontario, without regard to conflicts of law principles thereof, and the exclusive venue for any such litigation or arbitration shall be in Ontario, Canada. The parties waive any objection to the exclusive jurisdiction of the specified forums, including any objection based on forum non conveniens. In the event the matter is submitted to a court, Company and Customer hereby agree to waive their right to trial by jury. In the event the matter is submitted to arbitration by Company, the costs of arbitration shall be borne equally by the parties, and the arbitrator's award may be confirmed and reduced to judgment in any court of competent jurisdiction. Except as provided below, no claim or cause of action, whether known or unknown, shall be brought by either party against the other more than one year after the claim first arose. Claims not subject to the one-year limitation include claims for unpaid: (1) contract amounts, (2) change order amounts (approved or requested) and (3) delays and/or work inefficiencies. Customer will pay all of Company's reasonable collection costs (including legal fees and expenses).

32. Assignment. This Agreement is not assignable by the Customer except upon written consent of Company first being obtained. Company shall have the right to assign this Agreement. In whole or in part, or to subcontract any of its obligations under this Agreement without notice to Customer.

33. Entire Agreement. The parties intend this Agreement, together with any attachments or Riders (collectively the "Agreement") to be the final, complete and exclusive expression of their Agreement and the terms and conditions thereof. This Agreement supersedes all prior representations, understandings or agreements between the parties, written or oral, and shall constitute the sole terms and conditions of sale for all equipment and services. No waiver, change, or modification of any terms or conditions of this Agreement shall be binding on Company unless made in writing and signed by an Authorized Representative of Company.

34. Severability. If any provision of this Agreement is held by any court or other competent authority to be void or unenforceable in whole or in part, this Agreement will continue to be valid as to the other provisions and the remainder of the affected provision.

35. Legal Fees. Company shall be entitled to recover from the customer all reasonable legal fees incurred in connection with Company enforcing the terms and conditions of this Agreement.

36. Software and Digital Services.
Digital Enabled Services. Data. If Company provides Digital Enabled Services under this Agreement, these Digital Enabled Services require the collection, transfer and ingestion of building, equipment, system time series, and other data to Company's cloud-hosted software applications. Customer consents to and grants Company the right to collect, transfer, ingest and use such data to enable Company and its affiliates and agents to provide, maintain, protect, develop and improve the Digital Enabled Services and Company products and services. Customer acknowledges that, while Digital Enabled Services generally improve equipment performance and services, Digital Enabled Services do not prevent all potential malfunction, insure against all loss, or guarantee a certain level of performance. Customer shall be solely responsible for the establishment, operation, maintenance, access, security and other aspects of its computer network ("Network"), shall appropriately protect hardware and products connected to the Network and will supply Company secure Network access for providing its Digital Enabled Services. As used herein, "Digital Enabled Services" mean services provided hereunder that employ Company software and related equipment installed at Customer facilities and Company cloud-hosted software offerings and tools to improve, develop, and enable such services. Digital Enabled Service may include, but are not limited to, (a) remote servicing and inspection, (b) advanced equipment fault detection and diagnostics, and (c) data dashboarding and health reporting. If Customer accesses and uses Software that is used to provide the Digital Enabled Services, the Software Terms (defined below) will govern such access and use.
Digital Solutions. Use, implementation, and deployment of the software and hosted software products ("Software") offered under these terms shall be subject to, and governed by, Company's standard terms for such Software and Software related professional services in effect from time to time at

www.johnsoncontrols.com/techterms (collectively, the "Software Terms"). Specifically, the Company General EULA set forth at www.johnsoncontrols.com/buildings/legal/digital/general/eula governs access to and use of software installed on Customer's premises or systems and the Company Terms of Service set forth at www.johnsoncontrols.com/buildings/legal/digital/general/tos govern access to and use of hosted software products. The applicable Software Terms are incorporated herein by this reference. Other than the right to use the Software as set forth in the Software Terms, Company and its licensors reserve all right, title, and interest (including all intellectual property rights) in and to the Software and improvements to the Software. The Software that is licensed hereunder is licensed subject to the Software Terms and not sold. If there is a conflict between the other terms herein and the Software Terms, the Software Terms shall take precedence and govern with respect to rights and responsibilities relating to the Software, its implementation and deployment and any improvements thereto.

Notwithstanding any other provisions of this Agreement and unless otherwise agreed to by the parties in writing, the following terms apply to Software that is provided to Customer on a subscription basis (i.e., a time limited license or use right), (each a "Software Subscription"): Each Software Subscription provided hereunder will commence on the date the initial credentials for the Software are made available (the "Subscription Start Date") and will continue in effect until the expiration of the subscription term noted herein. At the expiration of the Software Subscription, such Software Subscription will automatically renew for consecutive one (1) year terms (each a "Renewal Subscription Term"), unless either party provides the other party with a notice of non-renewal at least ninety (90) days prior to the expiration of the then-current term. To the extent permitted by applicable law, Software Subscriptions purchases are non-cancelable and the sums paid nonrefundable. Fees for Software Subscriptions shall be paid annually in advance, invoiced on the Subscription Start Date and each subsequent anniversary thereof. Unless otherwise agreed by the parties in writing, the subscription fee for each Renewal Subscription Term will be priced at Company's then-applicable list price for that Software offering. Any use of Software that exceeds the scope, metrics or volume set forth in this Agreement will be subject to additional fees based on the date such excess use began.

37. Electronic Media. Either party may scan, fax, email, image, or otherwise convert this Agreement into an electronic format of any type or form, now known or developed in the future. Any unaltered or unadulterated copy of this Agreement produced from such an electronic format will be legally binding upon the parties and equivalent to the original for all purposes, including litigation. Company may rely upon Customer's assent to the terms and conditions of this Agreement, if Customer has signed this Agreement or demonstrated its intent to be bound whether by electronic signature or otherwise.

38. Lien Legislation. Notwithstanding anything to the contrary contained herein, the terms of this Agreement shall be subject to the lien legislation applicable to the location where the work will be performed, and, in the event of conflict, the applicable lien legislation shall prevail.

39. Privacy. Company as: Where Company factually acts as Processor of Personal Data on behalf of Customer (as such terms are defined in the DPA) the terms at www.johnsoncontrols.com/dpa ("DPA") shall apply. **Company as:** Company will collect, process and transfer certain personal data of Customer and its personnel related to the business relationship between it and Customer (for example names, email addresses, telephone numbers) as controller and in accordance with Company's Privacy Notice at <https://www.johnsoncontrols.com/privacy>. Customer acknowledges Company's Privacy Notice and strictly to the extent consent is mandatorily required under applicable law, Customer consents to such collection, processing and transfer. To the extent consent to such collection, processing and transfer by Company is mandatorily required from Customer's personnel under applicable law, Customer warrants and represents that it has obtained such consent.

40. FAR. Company supplies "commercial items" within the meaning of the Federal Acquisition Regulations (FAR), 48 CFR Parts 1-53. As to any customer order for a U.S. Government contract, Company will comply only with those mandatory low-downs for commercial item and commercial services subcontracts listed either at FAR 52.244-6, or 52.212-5(e)(1), as applicable.

41. License Information (US Security System Customers): AL Alabama Electronic Security Board

of Licensure 7956 Vaughn Road, Pmb 392, Montgomery, Alabama 36116 (334) 264-9388; AR Regulated by: Arkansas Board of Private Investigators And Private Security Agencies, #1 State Police Plaza Drive, Little Rock 72209 (501) 618-8600; CA Alarm company operators are licensed and regulated by the Bureau of Security and Investigative Services, Department of Consumer Affairs, Sacramento, CA, 95814. Upon completion of the installation of the alarm system, the alarm company shall thoroughly instruct the purchaser in the proper use of the alarm system. Failure by the licensee, without legal excuse, to substantially commence work within 20 days from the approximate date specified in the agreement when the work will begin is a violation of the Alarm Company Act: NY Licensed by N.Y.S. Department of the State; TX Texas Commission on Private Security, 5605 N. Lamar Blvd., Austin, 78752-4422, 512-424-7710. License numbers available at www.johnsoncontrols.com or contact your local Johnson Controls office.

Bulletin-1 Narrative

213098, BRIAR VISTA ELEMENTARY SCHOOL RENOVATION

Meeting Date and Time: 11/22/2023 12:00 PM

To: Name- Atiba Nunnally
 Position- Project Manager
 Company- C.E.R.M.
 Street Address- 1990 Lakeside Parkway, Suite 300,
 City, State, Zip Code- Tucker GA 30084

Bulletin: 001 Prepared By: Hiral Tank

This addendum contains changes to the requirements of the contract drawings and/or project manual. Such changes shall be incorporated into the contract documents and shall apply to the work with the same meaning and force as if they had been included in the original documents. Wherever this addendum modifies a portion of the paragraph of project manual or any portion of the drawing, the remainder of the paragraph of drawing affected shall remain in force.

The conditions of the basic project manual shall govern all work described in this addendum. Wherever the conditions of work and the quality of quantity of materials or workmanship are not fully described in this Addendum, the conditions of work, etc. included in the basic project manual for similar items of work shall apply to the work described in this addendum.

The "Conditions of the Contract" apply to all work described in this Addendum. The following changes shall be and are hereby made:

Summary of Revisions

Revisions include Architectural, Mechanical, and Electrical, revisions, and coordination items as noted below:

DRAWING REVISIONS:

ARCHITECTURE:

COVER SHEET-

- Updated the sheet index.

A00-09-

- Updated reflected ceiling plan for Offices and conference near the library space, to match Mechanical drawings.

A03-01-

- Updated reflected ceiling plan for Offices and conference near the library space, to match Mechanical drawings.

A04-02-

- Updated reflected ceiling plan for Offices and conference near the library space, to match Mechanical drawings.

MECHANICAL:**M001**

- Added keynote 14 to RTU Schedule to include the code required smoke detector in supply air ductwork.

M100

- Revised existing ductwork layout to reflect branch runs to office and conference room for replacement.

M200

- Added branch supply air runs to office and conference room.
- Changed RTU-2 from fully ducted return air to use of a short transfer air duct.

M201

- Showed 4' shift in location of RTU-2 for minimum roof edge setback.
- Shifted DSSC-2 away from roof edge.
- Corrected keynote call out for RTU-3.

M501

- Added BAS control sheet for RTU, WSHP and BARD units.

M502

- Added BAS controls sheet for WSHP Plant and BARD units with accessory heat wheel.

ELECTRICAL:**E100**

- Updated Electrical Fire Alarm Notes for new fire alarm scope of work.
- Updated Electrical Legend for new fire alarm scope of work.

E202

- Updated RTU-2 Electrical/HVAC information.

E301

- Updated notes and devices for the new security vestibule.

E401

- Added sheet E401 for new fire alarm scope of work.

PLUMBING:**P200**

- Shifted gas piping and added a note to replace roof drains.

SPECIFICATON REVISIONS:**00 01 10 TABLE OF CONTENTS**

- Updated contents

07 54 19 PVC Membrane Roofing

- Updated contents

08 41 56 BALLISTIC-RESISTANT STOREFRONTS AND ENTRANCES

- Specification section added.

28 31 00 FIRE ALARM SYSTEM

- Updated contents

End of Addendum Summary

CC:

Attachments:

Please review this information and advise writer of any corrections, misunderstandings, or additions within 3 business days.

SECTION 28 31 00

FIRE ALARM SYSTEM

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section covers fire alarm systems, including initiating devices, notification appliances, controls, and supervisory devices.
- B. Work covered by this section includes the furnishing of labor, equipment, and materials for installation of the fire alarm system as indicated on the drawings and specifications.
- C. The Fire Alarm System shall consist of all necessary hardware equipment and software programming to perform Fire alarm system detection and notification operations.

1.2 SCOPE OF WORK

- A. Provide a code compliant, fully analog addressable fire alarm system per the county school system requirements.

1.3 ACCEPTABLE EQUIPMENT AND SERVICE PROVIDERS

- A. Manufacturers: The equipment and service described in this specification are those supplied and supported by Simplex and are the only acceptable manufacturer for this project.

1.4 CODES

- A. The system and all associated operations shall be in accordance with the following:
 - 1. Requirements of the following Model Building Code: IBC, 2021 Edition
 - 2. NFPA 72, National Fire Alarm Code, 2019 Edition
 - 3. NFPA 70, National Electrical Code 2020 Edition
 - 4. NFPA 101, Life Safety Code, 2018 Edition
 - 5. Local Jurisdictional Adopted Codes and Standards
 - 6. ADA Accessibility Guidelines

1.5 SYSTEM DESCRIPTION

- A. General: Provide a complete, non-coded addressable microprocessor-based fire alarm system with initiating devices, notification appliances, and monitoring and control devices as indicated on the drawings and as specified herein.
- B. Power Requirements

1. The control unit shall receive AC power via a dedicated fused disconnect circuit.
 2. The system shall be provided with sufficient battery capacity to operate the entire system upon loss of normal AC power in a normal supervisory mode for a period of 24 hours with 15 minutes of alarm operation at the end of this period. The system shall automatically transfer to battery standby upon power failure. All battery charging and recharging operations shall be automatic.
 3. All circuits requiring system-operating power shall be 24 VDC nominal voltage and shall be individually fused at the control unit.
 4. The incoming power to the system shall be supervised so that any power failure will be indicated at the control unit. A green "power on" LED shall be displayed continuously at the user interface while incoming power is present.
 5. The system batteries shall be supervised so that a low battery or a depleted battery condition, or disconnection of the battery shall be indicated at the control unit and displayed for the specific fault type.
 6. The system shall support NAC Lockout feature to prevent subsequent activation of Notification Appliance Circuits after a Depleted Battery condition occurs in order to make use of battery reserve for front panel annunciation and control.
 7. The system shall support 100% of addressable devices in alarm or operated at the same time, under both primary (AC) and secondary (battery) power conditions.
 8. Loss of primary power shall sound a trouble signal at the FACP. FACP shall indicate when the system is operating on an alternate power supply.
- C. Software: The fire alarm system shall allow for loading and editing instructions and operating sequences as necessary.
1. The system shall be capable of on-site programming to accommodate system expansion and facilitate changes in operation.
 2. All software operations shall be stored in a non-volatile programmable memory within the fire alarm control unit. Loss of primary and secondary power shall not erase the instructions stored in memory.
 3. Panels shall be capable of full system operation during new site specific configuration download, master exec downloads, and slave exec downloads.
 4. Remote panel site-specific software and executive firmware downloads shall be capable of being performed over proprietary fire alarm network communications and via TCP/IP Ethernet network communications. Ethernet access to any fire alarm panel shall be capable of providing access only to authenticated users through a cryptographically authenticated and secure SSL tunnel.
 5. Panels shall automatically store all program changes to the panel's non-volatile memory each time a new program is downloaded. Panels shall be capable of storing the active site-specific configuration program and no less than 9 previous revisions in reserve. A compare utility program shall also be available to authorized users to compare any two of the saved programs. The compare utility shall provide a deviation report highlighting the changes between the two compared programs.
 6. Panels shall provide electronic file storage with a means to retrieve a record copy of the site-specific software and up to 9 previous revisions. Sufficient file storage shall be provided for other related system documentation such as record drawings, record of completion, owner's manuals, testing and maintenance records, etc.

7. The media used to store the record copy of site-specific software and other related system documentation shall be electrically supervised. If the media is removed a trouble shall be reported on the fire alarm control panel.
- D. History Logs: The system shall provide a means to recall alarms and trouble conditions in chronological order for the purpose of recreating an event history. A separate alarm and trouble log shall be provided.
- E. Recording of Events: The system shall be capable of recording all alarm, supervisory, and trouble events by means of system printer. The printout shall include the type of signal (alarm, supervisory, or trouble) the device identification, date and time of the occurrence. The printout shall differentiate alarm signals from all other printed indications.
- F. Wiring/Signal Transmission
1. Transmission shall be hard-wired using separate individual circuits for each zone of alarm operation, as required or addressable signal transmission, dedicated to fire alarm service only.
 2. System connections for initiating device circuits shall be Class B, Style D, signaling line circuits shall be Class B, Style 4 and notification appliance circuits shall be Class B, Style Y.
 3. Circuit Supervision: Circuit faults shall be indicated by a trouble signal at the FACP. Provide a distinctive indicating audible tone and alphanumeric annunciation.
- G. Supplemental Notification and Remote User Access (Fire Panel Internet Interface)
1. Fire Alarm Control Panel (FACP) shall have the capability to provide supplemental notification and remote user access to the FACP using Ethernet and TCP/IP communications protocol compatible with IEEE Standard 802.3.
 2. A standard RJ-45 Ethernet connection shall connect to the owners Ethernet network. Provisions for that connection must be provided at each fire alarm control panel as part of the contract.
 3. The means of providing supplemental email and SMS text messaging notification shall be agency listed for specific interfaces and for the purpose described in this section. The use of non-listed external third party products and interfaces is not acceptable.
 4. The fire panel internet interface shall be capable of sending automated notification of discrete system events via email and SMS text messaging to up to 50 individual user accounts and via email to up to 5 distribution list.
- H. Remote Services Access
1. Fire Alarm Control Panel (FACP) shall have the capability to provide a remote service access feature using Ethernet and TCP/IP communications protocol compatible with IEEE Standard 802.3. The Remote Access feature shall provide automatic notification of system faults and remote diagnostics of system status for responding technicians prior to arrival on site.
 2. A standard RJ-45 Ethernet connection shall connect to the owners Ethernet network. Provisions for that connection must be provided at each fire alarm control panel as part of the contract.

3. The Ethernet access feature shall be agency listed for specific interfaces and for the purpose described in this section. The use of non-listed external third party interfaces is not acceptable.
 4. The internet remote access service function shall provide automated real time off-site reporting of discrete system events to a remote service support center with details of internal FACP fault conditions allowing a pre-site visit analysis of repair requirements.
 5. The supplier shall provide a service contract for the Remote Service program that provides the following requirements:
 - a. 24/7 recording of FACP service activity.
 - b. Off-site diagnostics by a technical specialist to provide repair and parts guidance to the service technician prior to a site visit.
- I. Required Functions: The following are required system functions and operating features:
1. Priority of Signals: Fire alarm events have highest priority. Subsequent alarm events are queued in the order received and do not affect existing alarm conditions. Priority Two, Supervisory and Trouble events have second-, third-, and fourth-level priority, respectively. Signals of a higher-level priority take precedence over signals of lower priority even though the lower-priority condition occurred first. Annunciate all events regardless of priority or order received.
 2. Noninterfering: An event on one zone does not prevent the receipt of signals from any other zone. All zones are manually resettable from the FACP after the initiating device or devices are restored to normal. The activation of an addressable device does not prevent the receipt of signals from subsequent addressable device activations.
 3. Transmission to an approved Supervising Station: Automatically route alarm, supervisory, and trouble signals to an approved supervising station service provider, under another contract.
 4. Annunciation: Operation of alarm and supervisory initiating devices shall be annunciated at the FACP and the remote annunciator, indicating the type of device, the operational state of the device (i.e alarm, trouble or supervisory) and shall display the custom label associated with the device.
 5. Selective Alarm: A system alarm shall include:
 - a. Indication of alarm condition at the FACP and the annunciator(s).
 - b. Identification of the device /zone that is the source of the alarm at the FACP and the annunciator(s).
 - c. Operation of audible and visible notification appliances until silenced at FACP.
 - d. Selectively closing doors normally held open by magnetic door holders on the fire floor, floor above and floor below.
 - e. Unlocking designated doors.
 - f. Shutting down supply and return fans serving zone where alarm is initiated.
 - g. Closing smoke dampers on system serving zone where alarm is initiated.
 - h. Initiation of smoke control sequence.
 - i. Transmission of signal to the supervising station

- j. Initiation of elevator Phase I functions (recall, shunt trip, illumination of indicator in cab, etc.) in accordance with ANSI/ASME A 17.1 / CSA 844, Safety Code for Elevators and Escalators, when specified detectors or sensors are activated, as appropriate.
6. Supervisory Operations: Upon activation of a supervisory device such as a tamper switch, the system shall operate as follows:
 - a. Activate the system supervisory service audible signal and illuminate the LED at the control unit and the remote annunciator.
 - b. Pressing the Supervisory Acknowledge Key will silence the supervisory audible signal while maintaining the Supervisory LED "on" indicating off-normal condition.
 - c. Record the event in the FACP historical log.
 - d. Transmission of supervisory signal to the supervising station.
 - e. Restoring the condition shall cause the Supervisory LED to clear and restore the system to normal.
7. Alarm Silencing: If the "Alarm Silence" button is pressed, all audible alarm signals shall cease operation.
8. System Reset
 - a. The "System Reset" button shall be used to return the system to its normal state. Display messages shall provide operator assurance of the sequential steps ("IN PROGRESS", "RESET COMPLETED") as they occur. The system shall verify all circuits or devices are restored prior to resetting the system to avoid the potential for re-arming the system. The display message shall indicate "ALARM PRESENT, SYSTEM RESET ABORTED."
 - b. Should an alarm condition continue, the system will remain in an alarmed state.
9. A manual evacuation (drill) switch shall be provided to operate the notification appliances without causing other control circuits to be activated.
10. WALKTEST: The system shall have the capacity of 8 programmable passcode protected one person testing groups, such that only a portion of the system need be disabled during testing. The actuation of the "enable one person test" program at the control unit shall activate the "One Person Testing" mode of the system as follows:
 - a. The city circuit connection and any suppression release circuits shall be bypassed for the testing group.
 - b. Control relay functions associated with one of the 8 testing groups shall be bypassed.
 - c. The control unit shall indicate a trouble condition.
 - d. The alarm activation of any initiating device in the testing group shall cause the audible notification appliances assigned only to that group to sound a code to identify the device or zone.
 - e. The unit shall automatically reset itself after signaling is complete.
 - f. Any opening of an initiating device or notification appliance circuit wiring shall cause the audible signals to sound for 4 seconds indicating the trouble condition.

11. **Install Mode:** The system shall provide the capability to group all non-commissioned points and devices into a single "Install Mode" trouble condition allowing an operator to clearly identify event activations from commissioned points and devices in occupied areas.
 - a. It shall be possible to individually remove points from Install Mode as required for phased system commissioning.
 - b. It shall be possible to retrieve an Install Mode report listing that includes a list of all points assigned to the Install Mode. Panels not having an install mode shall be reprogrammed to remove any non-commissioned points and devices.
12. **Service Gateway:** A Service Gateway software application shall be provided that allows an authorized service person to remotely query panel status during testing, commissioning, and service without the need to return to the panel using standard email or instant messaging tools. For systems without a service gateway application the service provider shall provide a minimum of two technicians for any system testing or commissioning.

J. **Analog Smoke Sensors**

1. **Monitoring:** FACP shall individually monitor sensors for calibration, sensitivity, and alarm condition, and shall individually adjust for sensitivity. The control unit shall determine the condition of each sensor by comparing the sensor value to the stored values.
2. **Environmental Compensation:** The FACP shall maintain a moving average of the sensor's smoke chamber value to automatically compensate for dust, dirt, and other conditions that could affect detection operations.
3. **Programmable Sensitivity:** Photoelectric Smoke Sensors shall have 7 selectable sensitivity levels ranging from 0.2% to 3.7%, programmed and monitored from the FACP.
4. **Sensitivity Testing Reports:** The FACP shall provide sensor reports that meet NFPA 72 calibrated test method requirements.
 - a. Reports shall be capable of being printed for annual recording and logging of the calibration maintenance schedule.
 - b. Where required, reports shall be accessible remotely through:
 - 1) A Fire Panel Internet Interface using Ethernet and TCP/IP communications protocol compatible with IEEE Standard 802.3. The Fire Panel Internet Interface shall be capable of automatically scheduling email reports to individual user accounts on a weekly, bi-weekly, or monthly schedule.
 - 2) A PC Annunciator using an RS232-C connection to the FACP or a PC Annunciator Client using a TCP/IP communications protocol connection to the PC Annunciator server compatible with IEEE Standard 802.3.
5. The FACP shall automatically indicate when an individual sensor needs cleaning. The system shall provide a means to automatically indicate when a sensor requires cleaning. When a sensor's average value reaches a predetermined value, (3) progressive levels of reporting are provided. The first level shall indicate if a sensor is close to a trouble reporting condition and will be indicated on the FACP as

"ALMOST DIRTY." This condition provides a means to alert maintenance staff of a sensor approaching dirty without creating a trouble in the system. If this indicator is ignored and the second level is reached, a "DIRTY SENSOR" condition shall be indicated at the FACP and subsequently a system trouble is reported to the Supervising Station. The sensor base LED shall glow steady giving a visible indication at the sensor location. The "DIRTY SENSOR" condition shall not affect the sensitivity level required to alarm the sensor. If a "DIRTY SENSOR" is left unattended, and its average value increases to a third predetermined value, an "EXCESSIVELY DIRTY SENSOR" trouble condition shall be indicated at the control unit.

6. The FACP shall continuously perform an automatic self-test on each sensor that will check sensor electronics and ensure the accuracy of the values being transmitted. Any sensor that fails this test shall indicate a "SELF TEST ABNORMAL" trouble condition.
7. Programmable bases: It shall be possible to program relay and sounder bases to operate independently of their associated sensor.
8. Magnet test activation of smoke sensors shall be distinguished by its label and history log entry as being activated by a magnet.

K. Fire Suppression Monitoring

1. Water flow: Activation of a water flow switch shall initiate general alarm operations.
2. Sprinkler valve tamper switch: The activation of any valve tamper switch shall activate system supervisory operations.
3. WSO: Water flow switch and sprinkler valve tamper switch shall be capable of existing on the same initiating zone. Activation of either device shall distinctly report which device is in alarm on the initiating zone.

L. Audible Alarm Notification: By horns in areas as indicated on drawings.

1.6 SUBMITTALS

A. General: Submit the following according to Conditions of Contract.

1. Product data sheets for system components highlighted to indicate the specific products, features, or functions required to meet this specification. Alternate or as-equal products submitted under this contract must provide a detailed line-by-line comparison of how the submitted product meets, exceeds, or does not comply with this specification.
2. Wiring diagrams from manufacturer.
3. Shop drawings showing system details including location of FACP, all devices, circuiting and details of graphic annunciator.
4. System power and battery charts with performance graphs and voltage drop calculations to assure that the system will operate in accordance with the prescribed backup time periods and under all voltage conditions per UL and NFPA standards.
5. System operation description including method of operation and supervision of each type of circuit and sequence of operations for all manually and automatically initiated system inputs and outputs. A list of all input and output points in the system

shall be provided with a label indicating location or use of IDC, SLC, NAC, relay, sensor, and auxiliary control circuits.

6. Submittals may be submitted in electronic *.pdf format. File name shall include the job name, specification section and date of the submittal. Submittals containing multiple items must include a table of contents with hyperlinks to the cover page for each item. The cover page for each piece of equipment shall itemize equipment features to show compliance with or deviation from the requirements contained in the specifications and drawings. If the supporting product data is more than ten (10) pages long, include hyperlinks on the item's cover page to the supporting information.
- B. Operating instructions for FACP
1. Operation and maintenance data for inclusion in Operating and Maintenance Manual. Include data for each type of product, including all features and operating sequences, both automatic and manual. Provide the names, addresses, and telephone numbers of service organizations.
 2. Product certification signed by the manufacturer of the fire alarm system components certifying that their products comply with indicated requirements.
 3. Record of field tests of system.
- C. Submission to Authority Having Jurisdiction: In addition to routine submission of the above material, make an identical submission to the authority having jurisdiction. Include copies of shop drawings as required to depict component locations to facilitate review. Upon receipt of comments from the Authority, make resubmissions, if required, to make clarifications or revisions to obtain approval.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: A factory authorized installer is to perform the work of this section.
- B. Each and every item of the Fire Alarm System shall be listed under the appropriate category by Underwriters Laboratories, Inc. (UL), and shall bear the "UL" label.

1.8 MAINTENANCE SERVICE

- A. Maintenance Service Contract: Provide maintenance of fire alarm systems and equipment for a period of 12 months, using factory-authorized service representatives.
- B. Basic Services: Systematic, routine maintenance visits on a quarterly basis at times scheduled with the Owner. In addition, respond to service calls within 24 hours of notification of system trouble. Adjust and replace defective parts and components with original manufacturer's replacement parts, components, and supplies.
- C. Additional Services: Perform services within the above 12-month period not classified as routine maintenance or as warranty work when authorized in writing. Compensation for additional services must be agreed upon in writing prior to performing services.

- D. Renewal of Maintenance Service Contract: No later than 60 days prior to the expiration of the maintenance services contract, deliver to the Owner a proposal to provide contract maintenance and repair services for an additional one-year term. Owner will be under no obligation to accept maintenance service contract renewal proposal.

1.9 EXTRA MATERIALS

- A. General: Furnish extra materials, packaged with protective covering for storage, and identified with labels clearly describing contents as follows:
1. Notification Appliances: Furnish quantity equal to 10 percent of each type and number of units installed, but not less than one of each type.
 2. Smoke Detectors or Sensors, Fire Detectors, and Flame Detectors: Furnish quantity equal to 10 percent of each type and number of units installed but not less than one of each type.
 3. Detector or Sensor Bases: Furnish quantity equal to 2 percent of each type and number of units installed but not less than one of each type.

PART 2 –PRODUCTS

2.1 FIRE ALARM CONTROL PANEL

- A. General: Comply with UL 864, "Control Units and Accessories for Fire Alarm Systems".
- B. The following FACU hardware shall be provided:
1. Power Limited base panel with red cabinet and door, 120VAC input power.
 2. 3,000 point capacity where (1) point equals (1) monitor (input) or (1) control (output).
 3. 2000 points of annunciation where one (1) point of annunciation equals:
 - a. 1 LED driver output on a graphic driver or 1 switch input on a graphic switch input module.
 - b. 1 LED on panel or 1 switch on panel.
 4. 9.5 Amp Power Supply minimum with temperature compensated, dual-rate battery charger capable of charging up to 110 Ah batteries without a separate external battery charger. Battery charger voltage and amperage values shall be accessible on the FACU LCD display. Optional cooling fan shall be available to increase base power supply from 9.5 to 12.7 Amps. Optional expansion and back-up power supplies shall be available.
 5. One Auxiliary electronically resettable fused 2A @24VDC Output, with programmable disconnect operation for 4-wire detector reset.
 6. One Auxiliary Relay, SPDT 2A @32VDC, programmable as a trouble relay, either as normally energized or de-energized, or as an auxiliary control.
 7. Three (3) circuit Class A or B Addressable Notification Appliance Signaling Line Circuits (SLCs) module.
 - a. Each Addressable Notification Appliance SLC shall be rated at 3A and capable of supporting up to 127 Notification Appliances per channel.

- b. Wiring shall be 18 AWG to 12 AWG unshielded twisted pair wire. Systems that require shielded wire for Notification Appliances shall not be accepted.
 - c. A constant voltage under both primary and secondary power conditions shall be maintained at the notification appliance field wiring terminal connections in the FACU to ensure the voltage drop on the circuit is consistent under both primary and secondary power conditions.
 - d. For systems that do not provide a constant voltage source at the FACU notification appliance field wiring terminal connections, the fire alarm contractor shall:
 - 1) Provide separate point-to-point voltage drop calculations for all notification appliances under worst case secondary power specifications, and
 - 2) Perform a complete functional test of all notification appliances under worst case secondary power conditions.
8. Where required provide Intelligent Remote Battery Charger for charging up to 50Ah batteries.
 9. Four (4) Form "C" Auxiliary Relay Circuits (Form C contacts rated 2A @ 24VDC, resistive), operation is programmable for trouble, alarm, supervisory or other fire response functions. Relays shall be capable of switching up to ½ A @ 120VAC, inductive.
 10. The FACU shall support up to (5) RS-232-C ports and one service port. All (5) RS-232 Ports shall be capable of two-way communications.
 11. Remote Unit Interface: supervised Class B (Style 4) or Class X (Style 7) serial communication channel for control and monitoring of remotely located annunciators and I/O panels.
 12. Universal Communicator supporting POTS, Internet, and Cellular communications. Shall have multiple connectivity options and be configurable with a primary and secondary path. Paths can use any of the external connections; telephone line, cellular, or LAN Ethernet. Cellular shall be minimum 3G with 2G fallback. Cellular antenna extension kits shall be available for poor reception areas. IP based transmission: cellular or Ethernet shall be based on ADEMCO Contact ID Alarm Communication Protocol. Programmable DACT for either Common Event Reporting or per Point Reporting.
 13. Fire Panel Internet Interface to provide supplemental notification and remote user access to the FACU using Ethernet and TCP/IP communications protocol compatible with IEEE Standard 802.3.
- C. Cabinet: Lockable steel enclosure. Arrange unit so all operations required for testing or for normal care and maintenance of the system are performed from the front of the enclosure. If more than a single unit is required to form a complete control unit, provide exactly matching modular unit enclosures.
- D. Alphanumeric Display and System Controls: Panel shall include an 80 character LCD display to indicate alarm, supervisory, and component status messages and shall include a keypad for use in entering and executing control commands.

2.2 EMERGENCY POWER SUPPLY

- A. General: Components include battery, charger, and an automatic transfer switch.
- B. Battery: Sealed lead-acid or nickel cadmium type. Provide sufficient capacity to operate the complete alarm system in normal or supervisory (non-alarm) mode for a period of 24 hours. Following this period of operation on battery power, the battery shall have sufficient capacity to operate all components of the system, including all alarm notification devices in alarm mode for a period of 5 minutes.

2.3 ADDRESSABLE INITIATING

A. Addressable Manual Pull Stations

- 1. Description: Addressable single- action type, red LEXAN, with molded, raised-letter operating instructions of contrasting color. Station will mechanically latch upon operation and remain so until manually reset by opening with a key common with the control units.
- 2. Protective Shield: Where required, as indicated on the drawings, provide a tamperproof, clear LEXAN shield and red frame that easily fits over manual pull stations. When shield is lifted to gain access to the station, a battery powered piercing warning horn shall be activated. The horn shall be silenced by lowering and realigning the shield. The horn shall provide 85dB at 10 feet and shall be powered by a 9 VDC battery.

B. Smoke Sensors

- 1. General: Comply with UL 268, "Smoke Detectors for Fire Protective Signaling Systems." Include the following features:
 - a. Factory Nameplate: Serial number and type identification.
 - b. Each sensor base shall contain an LED that will flash each time it is scanned by the Control Unit (once every 4 seconds). In alarm condition, the sensor base LED shall be on steady.
 - c. Each sensor shall be scanned by the Control Unit for its type identification to prevent inadvertent substitution of another sensor type. Upon detection of a "wrong device", the control unit shall operate with the installed device at the default alarm settings for that sensor; 2.5% obscuration for photoelectric sensor, 135-deg F and 15-deg F rate-of-rise for the heat sensor, but shall indicate a "Wrong Device" trouble condition.
 - d. Sensors include a communication transmitter and receiver in the mounting base having a unique identification and capability for status reporting to the FACP. Sensor address shall be located in base to eliminate false addressing when replacing sensors.
- 2. Type: Smoke sensors shall be of the photoelectric or combination photoelectric I heat type.
- 3. Bases: Relay output, sounder and isolator bases shall be supported alternatives to the standard base.
- 4. Duct Smoke Sensor: Photoelectric type, with sampling tube of design and dimensions as recommended by the manufacturer for the specific duct size and installation conditions where applied. Sensor includes relay as required for fan shutdown.

- a. Environmental compensation, programmable sensitivity settings, status testing, and monitoring of sensor dirt accumulation for the duct smoke sensor shall be provided by the FACP.
 - b. The Duct Housing shall provide a supervised relay driver circuit for driving up to 15 relays with a single "Form C" contact rated at 7 A@ 28VDC or 1 QA@ 120VAC. This auxiliary relay output shall be fully programmable. Relay shall be mounted within 3 feet of HVAC control circuit.
 - c. Duct Housing shall provide a relay control trouble indicator Yellow LED.
 - d. Each duct smoke sensor shall have a Remote Test Station with an alarm LED and test switch.
 - e. Where indicated provide a NEMA 4X weatherproof duct housing enclosure that shall provide for the circulation of conditioned air around the internally mounted addressable duct sensor housing to maintain the sensor housing at its rated temperature range. The housing shall be UL Listed to Standard 268A.
5. Addressable Air Aspirating Duct Smoke Sensors; Photoelectric type smoke detection with an aspirating system shall provide remote sensor location for ducts with difficult service access. Detectors shall support remote housing up to 82ft with 1.05" OD rigid pipe; detectors shall support remote housing up to 50ft with ¾" OD flexible tubing. Sampling tubes shall be provided per design and dimensions as recommended by the manufacturer for the specific duct size and installation conditions where applied. Duct Detection system shall be UL listed to Standards 268A, and ULC listed to Standard S529.
- a. Environmental compensation, programmable sensitivity settings, status testing and monitoring of sensor dirt accumulation for the duct smoke sensor shall be provided by the FACP.
 - b. The Air Aspirating duct detection system shall supervise air flow through the duct housing and shall communicate trouble to the fire alarm control panel on a high or low air flow condition.
 - c. The Duct Housing shall provide a supervised relay driver circuit for driving up to 15 relays with a single Form C contact rated at 7A@ 28VDC and 120VAC. This auxiliary relay output shall be fully programmable. Relay shall be mounted within 3 feet of HVAC control circuit.
 - d. Duct Housing shall provide a magnetic test area and Red sensor status LED.
 - e. Each duct smoke sensor shall have a Remote Test Station with an alarm LED and test switch.
 - f. Each duct housing shall have remote functional smoke testing capability.
 - g. Each duct housing shall be supplied with a replacement air inlet filter.
 - h. Each duct housing shall have an optional water trap with a ball valve for draining to eliminate moisture buildup.
 - i. The Air Aspirating Detection system shall have an operating air velocity range of (0 to 4000 linear ft/minute) 0 to 1220 meters/minute.
 - j. The Addressable Air Aspirating Detection system shall be capable of use in other areas where point type detectors are not practical, such as; prison cells in correctional facilities, transformer vaults, cable tunnels and MRI rooms.

C. Addressable Circuit Interface Modules

1. Addressable Circuit Interface Modules: Arrange to monitor or control one or more system components that are not otherwise equipped for addressable communication. Modules shall be used for monitoring of waterflow, valve tamper, non-addressable devices, and for control of AHU systems.
2. Addressable Circuit Interface Modules will be capable of mounting in a standard electric outlet box. Modules will include cover plates to allow surface or flush mounting. Modules will receive their operating power from the signaling line circuit or a separate two wire pair running from an appropriate power supply, as required.
3. There shall be the following types of modules:
 - a. Type 1: Monitor Circuit Interface Module:
 - b. Type 2: Line Powered Monitor Circuit Interface Module
 - c. Type 3: Single Address Multi-Point Interface Modules
 - d. Type 4: Line Powered Control Circuit Interface Module
 - e. Type 5: 4-20 mA Analog Monitor Circuit Interface Module
 - f. All Circuit Interface Modules shall be supervised and uniquely identified by the control unit. Module identification shall be transmitted to the control unit for processing according to the program instructions. Modules shall have an on-board LED to provide an indication that the module is powered and communicating with the FACP. The LEDs shall provide a troubleshooting aid since the LED blinks on poll whenever the peripheral is powered and communicating.

2.4 ADDRESSABLE NOTIFICATION

A. Addressable Alarm Notification Appliances

1. Addressable Notification Appliances: The Contractor shall furnish and install Addressable Notification Appliances and accessories to operate on compatible signaling line circuits (SLC).
 - a. Addressable Notification appliance operation shall provide power, supervision and separate control of horns and strobes over a single pair of wires. The controlling channel (SLC) digitally communicates with each appliance and receives a response to verify the appliance's presence on the channel. The channel provides a digital command to control appliance operation. SLC channel wiring shall be unshielded twisted pair (UTP), with a capacitance rating of less than 60pf/ft and a minimum 3 twists (turns) per foot.
 - b. All Notification Appliances shall operate as a completely independent device allowing for specific location alerting of both fire alarm and Mass Notification functions. Each visible device (both clear fire alarm and amber mass notification) shall be capable of operating on multiple notification zones or completely separate from all other notification devices, this allows "On the fly" program operation changes for Mass Notification alerting and fire alarm notification.
 - c. All Notification Appliances shall operate as a completely independent device allowing for appliances in handicap accessible rooms and other locations to

- operate on the same SLC and to activate individually based on an alarm condition in a room or as part of a general alarm condition where all appliances activate together.
- d. Individual Notification Appliances shall be able to be grouped into zones (or operational groups) by central programming at the main fire alarm control panel.
 - e. Notification Appliances shall provide for "unobtrusive" testing. Each Notification Appliance shall be tested for audible and visible operation on an individual basis at the device or from the main fire alarm control panel, allowing for minimal invasive impact.
 - f. Class B (Style 4) notification appliances shall be wired without requiring traditional in/out wiring methods; addressable "T" Tapping shall be permitted. Up to 63 addresses can be supported on a single channel.
 - g. Each Addressable notification appliance shall contain an electronic module and a selectable address setting to allow it to occupy a unique location on the channel. This on-board module shall also allow the channel to perform appliance diagnostics that assist with installation and subsequent test operations. A visible LED on each appliance shall provide verification of communications and shall flash with the appliances address setting when locally requested using a magnetic test tool.
 - h. Each addressable notification appliance shall have electrical test point access without removing the device cover.
2. Addressable Horn: Addressable horn shall be listed to UL 464. Horn shall support Temporal Code 3, March Time (20, 60, or 120 8PM), Continuous, and Temporal Code 4 coding patterns. Horn appliances shall have a High/Low Setting, programmable by channel from the addressable controller or by appliance from the host FACP. The horn shall have a minimum sound pressure level of 83 or 89 dBA for steady) or of 79 or 85 dBA for coded operation. The horn device shall consist of three pieces; appliance, cover and mounting plate. For ease of installation the mounting plate shall mount directly to a standard single gang, double gang or 4" square electrical box, without the use of special adapter or trim rings. When the appliance is connected to an active circuit, the front cover of the appliance shall be removable without causing a trouble indication on the fire alarm control panel. Appliances shall be wired with UTP conductors, having a minimum of 3 twists per foot.
 3. Visible/Only: Addressable strobe shall be listed to UL 1971. The V/O device shall consist of a xenon flash tube and associated lens/reflector system, cover and mounting plate. For ease of installation the mounting plate shall mount directly to standard single gang, double gang or 4" square electrical box, without the use of special adapters or trim rings. When the appliance is connected to an active circuit, the front cover of the appliance shall be removable without causing a trouble indication on the fire alarm control panel. Appliances shall be wired with UTP conductors, having a minimum of 3 twists per foot. The V/O appliance shall be provided with multiple minimum flash intensities of 15cd, 75cd, 110cd, 135cd and 185cd. The Candela levels shall be settable from the fire alarm control panel or by using a hardware selector on the appliance.
 4. Audible/Visible: Addressable combination Audible/Visible (AV) Notification Appliances shall be listed to UL 1971 and UL 464. The strobe device shall consist

of a xenon flash tube and associated lens/reflector system, cover and mounting plate. For ease of installation audible/visible mounting plate shall mount directly to standard single gang, double gang or 4" square electrical box, without the use of special adapters or trim rings. The strobe shall provide multiple minimum flash intensities of 15cd, 75cd, 110cd, 135cd and 185cd. The Candela levels shall be settable from the fire alarm control panel or using a hardware selector on the appliance. The Horn shall support Temporal Code 3, March Time (20, 60, or 120 8PM), Continuous, and Temporal Code 4 coding patterns. The horn shall have a minimum sound pressure level of 83 or 89 dBA for steady or 79 or 85 dBA for coded operation. When the appliance is connected to an active circuit, the front cover of the appliance shall be removable without causing a trouble indication on the fire alarm control panel. Appliances shall be wired with UTP conductors, having a minimum of 3 twists per foot. The appliance shall be capable of two-wire synchronization with one of the following options:

- a. Synchronized Strobe with Horn on steady.
 - b. Synchronized Strobe with Temporal Code Pattern on Horn.
 - c. Synchronized Strobe with March Time cadence on Horn.
 - d. Synchronized Strobe firing to NAC sync signal with Horn silenced.
5. Addressable Speaker: Addressable Speaker notification appliances shall be listed to UL 1480. Individual device level supervision and activation control shall be provided by the fire alarm control unit.
- a. Speakers shall be individually powered, addressed, and controlled from a compatible fire alarm control unit Signaling Line Circuit (SLC) using Unshielded Twisted Pair (UTP) cable and T-taps shall be allowed for Class B installation reducing wiring costs and wiring distances. Shielded cable shall not be required.
 - b. Speakers shall provide for Fire Alarm and General Signaling functionality in a single unit, eliminating additional devices. Device "Self-Test" shall be supported by a compatible fire alarm control unit and shall be UL listed and NFPA 72 compliant. Speakers shall be UL listed to provide a 520Hz audio tone in compliance with NFPA 72 for sleeping areas.
 - c. The speaker audio shall be provided by a standard 25VRMS or 70.7VRMS audio circuit using Unshielded Twisted Pair (UTP) cable and T-taps shall be allowed for Class B installation reducing wiring costs and wiring distances. Supervision of this circuit shall be provided by the addressable speaker. Shielded cable shall not be required.
 - d. Speaker power taps shall be at a minimum of 0.25W, 0.50W, 1.0W and 2.0W. At the 1.0W tap, the speaker shall have a minimum UL rated sound pressure level of 86dBA at 10 feet for the Standard Output version and 84dBA at 10 feet for the High Fidelity version.
 - e. Speakers shall be available in either "Standard Output" with a minimum frequency response of 400 to 4000 Hz or in "High Fidelity Output" with a minimum frequency response of 200 to 10,000 Hz. Standard Output speakers shall use a multi-tapped speaker for audio/tone notification.
 - f. Wall mount appliances shall be available in White and Red and ceiling mount appliances shall be available in White, Red, and Black. Labeling shall be available as either "FIRE", "ALERT" or no labeling.

3.1 INSTALLATION GENERAL

- A. Install system components and all associated devices in accordance with applicable NFPA Standards and manufacturer's recommendations.
- B. Installation personnel shall be supervised by persons who are qualified and experienced in the installation, inspection, and testing of fire alarm systems. Examples of qualified personnel shall include, but not be limited to, the following:
 - 1. Factory trained and certified personnel.
 - 2. National Institute of Certification in Engineering Technologies (NICET) fire alarm level II certified personnel.
 - 3. Personnel licensed or certified by state or local authority.

3.2 EQUIPMENT INSTALLATION

- A. Furnish and install a complete Fire Alarm System as described herein and as shown on the plans. Include sufficient control unit(s), annunciator(s), manual stations, automatic fire detectors, smoke detectors, audible and visible notification appliances, wiring, terminations, electrical boxes, ethernet drops, and all other necessary material for a complete operating system.
- B. Existing Fire Alarm Equipment shall be maintained fully operational until the new equipment has been tested and accepted.
- C. Equipment Removal: After acceptance of the new fire alarm system, disconnect and remove the existing fire alarm equipment and restore damaged surfaces. Package operational fire alarm and detection equipment that has been removed and deliver to the Owner. Remove from the site and legally dispose of the remainder of the existing material.
- D. Water-Flow and Valve Supervisory Switches: Connect for each sprinkler valve required to be supervised.
- E. Install manual station with operating handle 48 inches (1.22 m) above floor. Install wall mounted audible and visual notification appliances not less than 80 inches (2.03 m) above floor to bottom of lens and not greater than 96 inches (2.44 m) above floor to bottom of lens.
- F. Mount outlet box for electric door holder to withstand 80 pounds pulling force.
- G. Make conduit and wiring connections to duct smoke detectors.
- H. Automatic Detector Installation: Conform to NFPA 72.
- I. Ethernet Drop: A standard RJ-45 Ethernet connection to the owner's Ethernet network shall be provided at each fire alarm control panel as part of the contract.

3.3 PREPARATION

- A. Coordinate work of this Section with other affected work and construction schedule.

3.4 WIRING INSTALLATION

- A. **System Wiring:** Wire and cable shall be a type listed for its intended use by an approval agency acceptable to the Authority Having Jurisdiction and shall be installed in accordance with the appropriate articles from the current approved edition of NFPA 70: National Electric Code (NEC).
- B. Contractor shall obtain from the Fire Alarm System Manufacturer written instruction regarding the appropriate wire/cable to be used for this installation. No deviation from the written instruction shall be made by the Contractor without the prior written approval of the Fire Alarm System Manufacturer.
- C. **Color Coding:** Color-code fire alarm conductors differently from the normal building power wiring. Use one color code for alarm initiating device circuits wiring and a different color code for supervisory circuits. Color-code notification appliance circuits differently from alarm-initiating circuits. Paint fire alarm system junction boxes and covers red.
- D. All wiring and cable installed exposed in a space, concealed inside a wall, concealed above a non-accessible ceiling or underground outside the building shall be installed in conduit. All line voltage wiring shall be installed in conduit. All low voltage wiring installed above accessible ceilings may be installed without conduit by using cable with a jacket which is U.L. listed for installation in a return air plenum.
- E. Plenum rated cable installed in corridors shall be installed in cable hangers which are specified in Electrical Section. All cables for this system shall be grouped together within the hanger and tied with a cable tie. See detail on the drawings for arrangement with other systems.
- F. Plenum rated cable installed in other spaces where there are no cable hangers shall be tied to the building structure at approximately 6'-0" on center using cable ties.
- G. Plenum cable shall pass through walls by drilling a hole in the wall and installing a conduit with bushings on each end through the wall. Install the cable through the conduit and in fire or smoke rated walls seal the opening around the conduit and the hole in the conduit with a U.L. listed fire rated sealant.
- H. All plenum rated cable used for the Fire Alarm system shall have a red outer jacket. All cable ties shall be plenum rated.
- I. Smoke detector heads shall not be installed until the final test of the system and all dust creating construction has ceased in that area. Heads installed prematurely will be removed and cleaned according to manufacturer's instructions.

3.5 FIELD QUALITY CONTROL

- A. **Manufacturer's Field Services:** Provide services of a factory-authorized service representative to supervise the field assembly and connection of components and the pretesting, testing, and adjustment of the system.

- B. Service personnel shall be qualified and experienced in the inspection, testing, and maintenance of fire alarm systems. Examples of qualified personnel shall be permitted to include, but shall not be limited to, individuals with the following qualifications:
 - 1. Factory trained and certified.
 - 2. National Institute for Certification in Engineering Technologies (NICET) fire alarm certified.
 - 3. Certified by a state or local authority.
- C. Inspection
 - 1. Inspect equipment installation, interconnection with system devices, mounting locations, and mounting methods.
 - 2. Verify that units and controls are properly installed, connected, and labeled and that interconnecting wires and terminals are identified.
- D. Acceptance Operational Tests
 - 1. Perform operational system tests to verify conformance with specifications:
 - a. Each alarm initiating device installed shall be operationally tested. Each device shall be tested for alarm and trouble conditions. Contractor shall submit a written certification that the Fire Alarm System installation is complete including all punch-list items. Test battery operated emergency power supply. Test emergency power supply to minimum durations specified. Test Supervising Station Signal Transmitter. Coordinate testing with Supervising Station monitoring firm/entity.
 - b. Test each Notification Appliance installed for proper operation. Submit written report indicating sound pressure levels at specified distances.
 - c. Test Fire Alarm Control Panel and Remote Annunciator.
- E. Retesting: Correct deficiencies indicated by tests and completely retest work affected by such deficiencies. Verify by the system test that the total system meets the Specifications and complies with applicable standards.
- F. Report of Tests and Inspections: Provide a written record of inspections, tests, and detailed test results in the form of a test log. Use NFPA 72 Forms for documentation.
- G. Final Test, Record of Completion, and Certificate of Occupancy:
 - 1. Test the system as required by the Authority Having Jurisdiction in order to obtain a certificate of occupancy. Provide completed NFPA 72 Record of Completion form to Owner and AHJ.

3.6 TRAINING

- A. Provide the services of a factory-authorized service representative to demonstrate the system and train Owner's maintenance personnel as specified below.
 - 1. Train Owner's maintenance personnel in the procedures and schedules involved in operating, troubleshooting, servicing, and preventive maintaining of the system. Provide a minimum of 8 hours' training.
 - 2. Schedule training with the Owner at least seven days in advance.

Briar Vista Elementary School Renovations
Henderson Mill Elementary School Renovation
Bulletin No. 1

Corgan Project No. 21309.0000
Corgan Project No. 22392.0000
22 November 2023

END OF SECTION



DeKalb County School District Briar Vista Elementary School Renovation ISSUED FOR CONSTRUCTION



NOTES:
 1. SEE ALL SHEETS FOR COMPLETE INFORMATION.
 2. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.
 3. ALL MATERIALS AND METHODS SHALL BE AS SHOWN OR APPROVED BY THE ARCHITECT.
 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS.
 5. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AT ALL TIMES.
 6. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES AND STRUCTURES.
 7. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING TREES AND LANDSCAPE.
 8. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING DRIVEWAYS AND SIDEWALKS.
 9. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING FENCES AND WALLS.
 10. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING SIGNAGE.
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 14. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING FENCES AND WALLS.
 15. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING SIGNAGE.

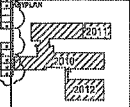
CODE INFORMATION		ISSUES
PROJECT DATA AND CODE INFORMATION		1. ISSUES
PROJECT NAME	Briar Vista Elementary School Renovation	2. ISSUES
PROJECT NO.	210300000	3. ISSUES
DATE OF ISSUE	10.10.2022	4. ISSUES
ISSUED FOR	CONSTRUCTION	5. ISSUES
DESIGNER	CORGAN	6. ISSUES
DATE OF DESIGN	10.10.2022	7. ISSUES
DATE OF ISSUE	10.10.2022	8. ISSUES
DATE OF REVISION		9. ISSUES
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SHEET LIST		DATE	BY
NO.	DESCRIPTION		
1	COVER SHEET	10/10/22	JK
2	GENERAL NOTES	10/10/22	JK
3	FOUNDATION	10/10/22	JK
4	CONCRETE	10/10/22	JK
5	STEEL	10/10/22	JK
6	MECHANICAL	10/10/22	JK
7	ELECTRICAL	10/10/22	JK
8	PLUMBING	10/10/22	JK
9	MECHANICAL	10/10/22	JK
10	ELECTRICAL	10/10/22	JK
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Date of Issue:
 10.10.2022

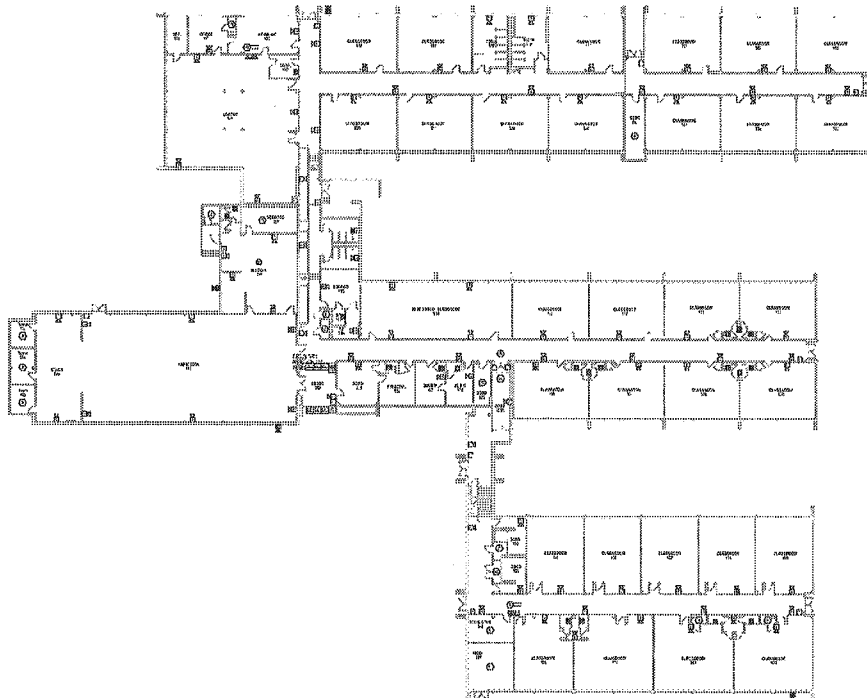
Briar Vista Elementary School Renovation
 1131 Briar Vista Terrace NE, Atlanta, GA 30324



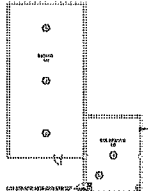
COVER SHEET

COVER SHEET (REV)

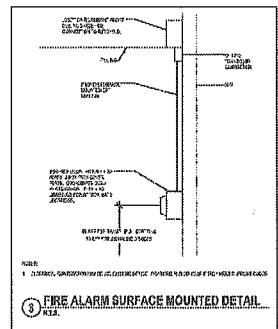
PROJECT TEAM				COVER SHEET
ARCHITECT CORGAN <small>7000 N. HIGHWAY 100 SUITE 100 ATLANTA, GA 30328</small>	STRUCTURAL SHEAR STRUCTURAL <small>3000 PHOENIX BLVD, SUITE 100 ATLANTA, GA 30328 404.525.0000</small>	MECHANICAL JSA CONSULTING ENGINEERS <small>1000 PHOENIX BLVD, SUITE 100 ATLANTA, GA 30328 404.525.0000</small>	ELECTRICAL BOLDEN-WILLIAMS & ASSOCIATES, INC. <small>1000 PHOENIX BLVD, SUITE 100 ATLANTA, GA 30328 404.525.0000</small>	JOB 21300.0000 DATE 10.10.2022 SHEET COVER



① ELECTRICAL FLOOR PLAN - FIRE ALARM - MAIN LEVEL
VP-1-10



② ELECTRICAL FLOOR PLAN - FIRE ALARM - BASEMENT
VP-1-10



CORGAN
ENGINEERS
ARCHITECTS

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This document was prepared by or under the authority of the undersigned Professional Engineer.
 Ronald L. Bolden
 Date of Issue: 07.10.2023

Briar Vista Elementary School Renovation
 1131 Briar Vista Terrace NE, Atlanta, GA 30324

ELECTRICAL OVERALL FIRE ALARM PLANS	
JOB	21399.0000
DATE	11/28/23
SHEET	E401

11/08/2023 10:57:16 AM 0/01 ELECTRICAL OVERALL FIRE ALARM PLANS